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TRANSCRIPT OF RECORD

Supreme Court of the United States

OCTOBER TERM, 1944

No. 34

THE SAGE STORES COMPANY AND CAROLENE
PRODUCTS COMPANY, PETITIONERS,

vs.

THE STATE OF KANSAS, EX REL. A. B. MITCHELL
(SUBSTITUTED AS ATTORNEY GENERAL)

ON WRIT OF CERTIORARI TO THE SUPREME COURT OF THE STATE
OF KANSAS

PETITION FOR CERTIORARI FILED MARCH 1, 1944.

CERTIORARI GRANTED APRIL 10, 1944.

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IN THE
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OF KANSAS**

THE STATE OF KANSAS EX REL. A. B. MITCHELL
(SUBSTITUTED), AS ATTORNEY GENERAL,
PLAINTIFF,

VS.

THE SAGE STORES COMPANY, A CORPORATION, AND
CAROLENE PRODUCTS COMPANY, A
CORPORATION, DEFENDANTS.

Original Action in Quo. Warranto.

UPON DEFENDANTS' EXCEPTIONS TO THE REPORT OF
HONORABLE J. B. MCKAY, COMMISSIONER.

ABSTRACT FOR THE DEFENDANTS.

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No. 35143.

IN THE
**SUPREME COURT OF THE STATE
OF KANSAS**

THE STATE OF KANSAS EX REL. A. B. MITCHELL
(SUBSTITUTED), AS ATTORNEY-GENERAL,
PLAINTIFF,

VS.

THE SAGE STORES COMPANY, A CORPORATION, AND
CAROLENE PRODUCTS COMPANY, A
CORPORATION, DEFENDANTS.

Original Action in Quo Warranto.

UPON DEFENDANTS' EXCEPTIONS TO THE REPORT OF
HONORABLE J. B. MCKAY, COMMISSIONER.

ABSTRACT FOR THE DEFENDANTS.

This action was brought in this court by the filing of a petition on December 14, 1940, by the State of Kansas on relation of Jay S. Parker, Attorney General (upon retirement of Judge Parker as Attorney General, his successor, A. B. Mitchell, was substituted as relator) against

The Sage Stores Company, a corporation, and Carolene Products Company, a corporation, defendants.

The cause was referred to Honorable J. B. McKay as Commissioner to hear the testimony and to submit findings of fact and conclusions of law. Thereafter the parties submitted an agreed statement of facts, and each party filed a written statement of his case.

Testimony of numerous witnesses was taken before the Commissioner between the dates of September 15, 1941, and July 14, 1942, the hearings being held at the following points: Litchfield, Illinois; New Orleans, Louisiana; Chicago, Illinois; Topeka, Kansas; Kansas City, Missouri; St. Louis, Missouri, and Madison, Wisconsin. Exclusive of exhibits, the testimony comprises a transcript of 4,857 pages.

The Commissioner's report covering his findings of fact and conclusions of law was filed on December 15, 1942.

The defendants have filed exceptions to the Commissioner's findings of fact and conclusions of law, and the plaintiff has filed a motion for entry of judgment in its favor on the Commissioner's findings of fact and conclusions of law.

The defendants submit the following abstract of the record for consideration by the court in passing upon the defendants' exceptions and the plaintiff's motion for judgment.

PLEADINGS.

The case was heard upon the following pleadings, captions and signatures being omitted:

Amended Petition.

Comes now the plaintiff, and for its cause of action alleges:

I.

That Jay S. Parker is the duly elected, qualified and acting Attorney General of the State of Kansas.

II.

That the Sage Stores Company is a corporation organized under the laws of the State of Kansas and doing business in the State of Kansas with its principal place of business at Topeka, Kansas.

III.

That Carolene Products Company is a corporation organized under the laws of the State of Michigan with its principal place of business at Litchfield, Illinois, and that Charles Houser is its president and executive officer.

IV.

That the defendant, The Sage Stores Company, on the first day of July, 1940, filed with the Secretary of State of the State of Kansas its application to the State Charter Board of the State of Kansas for authority to engage in business in the State of Kansas as a corporation. In said application, said defendant corporation stated the full nature and character of the business it purported to conduct in the State of Kansas to be "the transaction of a general mercantile and produce business and all things necessary and incidental thereto."

V.

That the State Charter Board, on the first day of July, 1930, granted said application, and said corporation, upon the payment of the fees provided by law, was granted a charter by the State Charter Board authorizing said corporation to engage in business in said state in accordance with the terms of its application.

VI.

That ever since said defendant, the Sage Stores Company, was incorporated as aforesaid, it has been and now is a corporation duly authorized to do the kind of business above mentioned and transact corporate business in this state, and did, on March 30, 1940, file with the Secretary of State of the State of Kansas its annual statement as of December 31, 1939, showing it to be a going concern and describing the nature of business it was doing to be "retail groceries and meats."

VII.

That said defendant, the Sage Stores Company, since it was authorized to do business within the State of Kansas, has been and now is doing acts in the State of Kansas which amount to a surrender and forfeiture of its rights and privileges as a corporation within the State of Kansas, and now is abusing its powers and exercising powers not conferred on it by law in that said defendant, the Sage Stores Company, has been and now is unlawfully selling, keeping for sale and has in its possession with intent to sell and exchange, not being the first sale thereof in this state in the original package intact and unbroken, milk, cream, skim milk, buttermilk, condensed and evaporated milk, powdered milk, condensed skim milk

and the fluid derivatives of them, to which have been added various fats and oils other than milk fat under the fictitious trade names of Carolene and Milnut, all in violation of the milk, cream and dairy public health laws of this state as provided in Article 7 of Chapter 65 of the General Statutes of Kansas, 1935, and more particularly of Section 65-707 (F) (2), G. S., 1935.

VIII.

Plaintiff further alleges that the Carolene Products Company, a corporation, is organized under the laws of the State of Michigan for the purpose of engaging in the distribution and sale of said milk, cream, skim milk, buttermilk, condensed and evaporated milk, powdered milk, condensed skim milk and the fluid derivatives thereof, to which have been added fats and oils other than milk fat under the fictitious trade names of Carolene and Milnut manufactured by the Litchfield Creamery Company, a corporation, of Litchfield, Illinois.

IX.

That the product being sold by the defendant, the Sage Stores Company, a corporation, in the State of Kansas is the product which defendant, Carolene Products Company, distributes in various states including the State of Kansas. That the State of Kansas is a market for the product of the Carolene Products Company if such product can lawfully be sold in the State of Kansas and the defendant, the Sage Stores Company, and other retailers in Kansas are market outlets for such product if it can lawfully be sold in Kansas.

That said Carolene Products Company, although not authorized to do business in the State of Kansas nor doing business in the State of Kansas does have a distinct interest in the subject of this litigation as to whether said product so manufactured by the Litchfield Creamery Company and so distributed by said Carolene Products Company can lawfully be sold in the State of Kansas. If said product cannot lawfully be sold in Kansas, the Carolene Products Company would thereby be deprived of a large market for its said products. The said Carolene Products Company has contended to the retailers in this state and to the State of Kansas that its product can lawfully be sold by them in Kansas. As a result thereof, there is an actual controversy between the Carolene Products Company and the State of Kansas as to whether or not the sale of said products containing a fat other than milk fat is lawful. As a result thereof, the Carolene Products Company, a corporation, should be a party defendant for a full determination of the issues involved and plaintiff asks a declaratory judgment against said Carolene Products Company as to whether there can be kept for sale and have in possession with the intent to sell or exchange, not being the first sale thereof in this state in the original package intact and unbroken, milk, cream, skim milk, buttermilk, condensed and evaporated milk, powdered milk, condensed skim milk and the fluid derivatives of them to which has been added various fats and oils other than milk fat whether under the fictitious trade name of Carolene and Milhut or any other trade name whatever.

7
XI.

That by reason of the facts herein stated, the Sage Stores Company; a corporation, through its agents, has willfully, continuously and unlawfully misused and abused the franchises, privileges and authority conferred upon it by the laws of the State of Kansas as aforesaid, and the commission of the acts herein stated has been of great harm and injury to the public and a perversion and misuser of the franchise granted to it by the State of Kansas and a usurpation of franchises and privileges not granted to said defendant by the State of Kansas, all to the great injury of the general public and the state.

Wherefore, plaintiff prays judgment that defendant, the Sage Stores Company, a corporation, be ousted, restrained and enjoined from acting or doing business as a corporation within the State of Kansas or from the exercise within the State of Kansas of any business as a corporation, and that all corporate acts, franchises and privileges be forfeited and the franchise seized, and that plaintiff have and recover from said defendant the costs of this action and such other and further relief as may be just and lawful, and

Plaintiff further prays judgment that the defendant, Carolene Products Company, be restrained and enjoined from ever selling, keeping for sale and having in its possession with intent to sell or exchange, not being the first sale thereof in this state in the original package intact and unbroken, of the products hereinbefore named containing fat and oils other than milk fat under any fictitious trade name whatever and that said defendant, Carolene Products Company, be restrained and enjoined from

ever coming into this state or seeking authority to do business in this state for the sale or possession with the intent to sell and exchange any of said products.

Plaintiff further prays that while this action is pending and until the termination thereof, said defendants and each of them and their agents, officers and employees be restrained from the unlawful sale of and possession with intent to sell and exchange any milk, cream, skim milk, buttermilk, condensed and evaporated milk, powdered milk, condensed skim milk or any of the fluid derivatives thereof to which has been added any fat or oil other than milk fat under the fictitious trade names of Carolene or Milnut or any other name whatsoever, and that, upon final hearing, said restraining order be made permanent.

2.

Answers.

The portions printed in italics were stricken by the court upon motion of the plaintiff.

(a)

Separate Answer of Defendant, Carolene Products Company.

Comes now the defendant, Carolene Products Company, a corporation, and files this, its separate answer to plaintiff's amended petition.

1.

This defendant states that the amended petition filed herein is insufficient in law, because:

(1) The amended petition does not state facts sufficient to warrant the granting of any relief against this defendant.

(2) The prohibition of the sale and possession of Milnut and Carolene and punishment therefor, notwithstanding that said article is a wholesome, nutritious food product rich in vitamins, is unconstitutional and void for the following reasons:

(a) Such prohibition and punishment deprives this defendant of its life, liberty and property without due process of law in violation of the 14th Amendment to the Constitution of the United States; and deprives this defendant of the equal protection of the laws of the State of Kansas in violation of said constitutional provision and abridges the privileges and immunities of the defendant as a citizen of the United States in violation of said constitutional provisions.

(b) Such prohibition and punishment violates Section 1 of the Bill of Rights of the Constitution of Kansas by denying to this defendant its natural and constitutional rights of life, liberty and the pursuit of happiness.

(c) Such prohibition and punishment under any statute relating thereto and not embracing generally all foods containing fat or oil other than butter fat is in violation of Section 17 of Article II of the Constitution of Kansas prohibiting the passage of a special law where a general law can be made applicable.

(d) The prohibition of the sale of a pure, wholesome, sanitary, nutritious and unharmed food compound, and punishment therefor, is contrary to public policy, is an arbitrary and unreasonable interference with private persons, is wholly without the scope of the police power and is an unreasonable and unnecessary restriction of trade and is, therefore, unlawful, oppressive and unrelated to the health, welfare, safety or morals of the people of the State, or any of them.

(3) That the petition and action is based upon an act of the General Assembly of Kansas known and designated as Section 65-707, G. S. Kan., 1935, which act is unconstitutional and void for each of the reasons hereinabove set out in paragraph I, 2.

II.

This defendant admits the following facts, to-wit:

(1) That it is a corporation organized under the laws of the State of Michigan for the purpose of engaging in the distribution and sale of compounds of evaporated skim milk and fats and oils other than milk fat, and admits that it is not authorized to do business in the State of Kansas and admits that it is not doing business in the State of Kansas.

(2) That its product, Milnot and Carolene, is sold in the State of Kansas and that it is interested in the question of whether or not its product, Milnot and Carolene, may be lawfully sold by persons transacting business in the State of Kansas.

III.

This defendant denies the following allegations in the amended petition:

(1) This defendant denies that at the time of the institution of this suit, or at any time thereafter, it was selling or has sold for resale in the State of Kansas its product known as Carolene and Milnut containing coconut oil, and in this regard states that the only product being sold for resale in the State of Kansas at the time of the filing of this suit, or at any time thereafter, is its

product known as Carolene and Milnot, which is a different product than Carolene and Milnut containing coconut oil.

(2) This defendant denies that it is selling in the State of Kansas or selling to persons for resale in the State of Kansas any article or commodity of food, the possession or sale of which is unlawful under the laws of the State of Kansas.

IV.

By way of other and further defense defendant states the following facts, to-wit:

(1) This defendant states that Carolene and Milnot, the only product sold by this defendant in Kansas, are identical except for trade names; that Carolene and Milnot will be referred to hereinafter as defendant's product.

(2) This defendant states that it has not shipped into the State of Kansas or sold in the State of Kansas any product containing coconut oil or bearing the label criticized by this Court since the final decision and judgment of this Court in the Case of *Carolene Products Company v. J. C. Mohler et al.*, Number 34307.

(3) That defendant's product is a wholesome, nutritious, noninjurious, unadulterated and beneficial food compound; that the sole ingredients of defendant's said product are pure, sweet skimmed milk, refined, edible, bland cottonseed oil and certified natural vitamin concentrates; that each of these ingredients is uniformly recognized as a pure, wholesome food in wide use throughout the world by humans; that there is no other ingredient in defendant's product except these pure foods; that in the

compounding of these ingredients in the manufacture of defendant's product, the food value and purity of each of the ingredients is not only undamaged but, on the contrary, improved; that defendant's product is manufactured in the modern, sanitary creameries of the Litchfield Creamery Company at Litchfield, Illinois, and at Warsaw, Indiana; that defendant's product is manufactured by mixing (a) pure, sweet skimmed milk, (b) refined, bland cottonseed oil of the highest grade, and (c) natural certified vitamin A and Vitamin D concentrates in constant and adequate quantities of the highest grade, purchased from reputable and nationally known tested laboratories; that this mixture is then compounded by a special process, and thereafter evaporated at the Litchfield Creamery Company with the finest modern and sanitary equipment in the same manner as sweet, whole or skimmed milk is evaporated in the manufacture of evaporated milk; that after evaporation, at the end of which the volume of the mixture is reduced to 40% of the original volume solely from loss of water, the product is put up in hermetically sealed cans by modern and sanitary canning machinery; that after the canning, the cans and the product therein are thoroughly sterilized under steam pressure at 240° F. in the same manner as canned evaporated whole milk is sterilized; that defendant's product is rendered thereby absolutely pure and free of all bacteria and so remains thereafter.

(4) That defendant's product is superior to whole milk and superior to evaporated whole milk in Vitamin A content and Vitamin D content, in each case both as to uniformity and quantity; that each 14 1-2 ounce can of

defendant's product contains 2,000 U. S. P. units of Vitamin A and 400 U. S. P. units of Vitamin D; that this Vitamin A and D content is ideal for human foods of this type and renders defendant's product superior to whole milk or evaporated whole milk as a source of Vitamin A and Vitamin D for human needs; that whole milk and evaporated whole milk as compared to defendant's product are inferior and deficient in Vitamin D content and Vitamin A content both as to uniformity and quantity, the quantity and quality of the Vitamin A and Vitamin D content of whole milk fluctuating with the season, the feed of the cow, the breed of the cow and the condition of the cow.

(5) That with respect to the remaining vitamins present in whole milk or evaporated whole milk defendant's product is demonstrably superior; that Vitamins A and D are the fat soluble vitamins of whole milk; that the remaining vitamins of whole milk are water soluble; that these water soluble vitamins are present in defendant's product in far greater amounts and concentration than in an equal amount of whole milk or evaporated whole milk.

(6) That the pure refined cottonseed oil present in defendant's product is a pure, wholesome, nutritious and beneficial food highly suitable for human consumption and superior to butter fat in digestibility, growth promotion, good value and in every other respect; that there have been such great advances in the transportation, manufacture and refinement of cottonseed oil in the past ten years that cottonseed oil has been rendered the most desirable fat known to man for human consumption; that pure refined cottonseed oil has been used extensively for

the past ten years and is now used throughout the world, as well as in this country, in the manufacture and compounding of too many foods and food compounds to be enumerated here, but which include salad dressings, margarines, infant foods, shortenings, salad oils and many other prime foods of the United States.

(7) That while pure, refined cottonseed oil has always been a leading article ~~of food~~, wholesome, nutritious and beneficial for the human race; such great strides have been made in the processes of refinement that pure, refined cottonseed oil is absolutely sterile, bland, clean, wholesome and uniformly nutritious; that cottonseed oil is not only noninjurious, but is a human food superior to butter fat in digestibility and promotion of growth, and in all other nutritional characteristics; that when fortified as in defendant's product with vitamins A and D, cottonseed oil is superior to butterfat in the fat soluble and fat borne vitamins.

(8) That ordinary sweet whole milk consists of approximately 4% fat and 96% skimmed milk; that the skimmed milk consists of water containing in solution the essential valuable parts of the milk, namely, the proteins, carbohydrates (milk sugars), valuable minerals, and the water soluble vitamins; that all the vitamins contained in milk are water soluble except Vitamins A and D, which are fat soluble, and which are contained in the fat; that the removal of the fat by separation leaves skimmed sweet milk containing the principal food values of the milk and all the water soluble vitamins; that the skimmed milk present in defendant's product is reduced by evaporation to 40% of the original volume; that because of the

evaporation it contains the food elements and vitamins of the ordinary skimmed milk in concentration two and one-quarter times the amount of ordinary skimmed milk.

(9) That the fat soluble Vitamins A and D introduced in defendant's product are secured from nationally known, reputable laboratories which have extracted these vitamins from prime natural sources such as fish livers and prepared these concentrates of readily available vitamins for use in human food and for medical purposes.

(10) That defendant's product is a pure food compound containing approximately the following chemical constituents:

Fat	Approximately	6.00%
Protein	"	7.75%
Carbohydrates	"	10.75%
Mineral Salts	"	1.65%
Water	"	73.85%

(11) Defendant's product has been widely used in the United States by housewives and dieticians and others engaged in the preparation of foods, and has been found highly satisfactory in Kansas and in every other state in which it has been sold or used; that in addition to this practical experience, actual disinterested scientific experiments have been conducted for the public benefit from time to time by the Massachusetts Institute of Technology, through its department of Bio-chemistry, which has at all times found its product to be a wholesome and nutritious food compound superior to evaporated milk or whole milk in every respect, and the sale thereof to be a decided public benefit, and defendant so alleges the facts to be. In addition, disinterested scientific experiments,

conducted by the Laboratory of Vitamin Technology of Chicago, have shown defendant's product to be uniformly healthful, growth-promoting, and superior to whole milk or evaporated whole milk in every respect. This defendant further states that bio-chemists, physicians, pediatricians, dieticians and nutritionists throughout this country have made extensive investigation into the composition and use of defendant's product, and have unanimously found defendant's product to be wholesome, healthful, growth-promoting, nutritious and beneficial generally as a food in every respect; that defendant's product, as well as similar preparations and compounds, is unusually well fitted as infant food; that in many cases where evaporated whole milk and whole milk cannot be fed to infants, defendant's product is validly usable and satisfactory; that defendant's product complies in all respects with the Federal food and drug laws and with all Kansas laws relating to and prohibiting the adulteration and misbranding of food products; that all of defendant's product sold in Kansas, as well as elsewhere, is properly and plainly labeled, with a prominent warning that the product is not evaporated milk or cream; that the uniform label used on defendant's product is as follows:



13 FLUID OZS - 14 1/2 OZS. NET WT.

MILNOT

REG. U. S. PAT. OFF.

"IT WHIPS"

NOT EVAPORATED MILK OR CREAM

A COMPOUND
OF EVAPORATED
SKIMMED MILK,
COTTONSEED OIL,
VITAMINS A & D



Contains not
less than

2000 U. S. P. UNITS

VITAMIN A

(from fish liver oil)
and 400 U. S. P. UNITS

VITAMIN D

(Activated ergosterol)

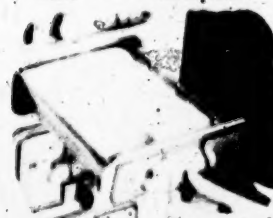
MANUFACTURED FOR CAROLINE PRODUCTS CO.

LITCHFIELD, ILLINOIS, U. S. A.

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For better flavor and
more inviting appear-
ance, serve Whipped
Milnot with all desserts.



Whipped Milnot
in your favorite recipes,
or added to prepared
mixes, makes smooth
frozen desserts. ³³
Chill thoroughly before
whipping.



Use Milnot diluted
with an equal amount
of water as a healthful,
appetizing ingredient in
all cooking and baking.



13 FLUID OZS - 14 1/2 OZS. NET WT.

Carolene

REG. U. S. PAT. OFF.

"IT WHIPS"

NOT EVAPORATED MILK OR CREAM

A COMPOUND
OF EVAPORATED
SKIMMED MILK,
COTTONSEED OIL,
VITAMINS A & D
IN FISH LIVER OIL.



Contains not
less than

2000 U. S. P. UNITS

VITAMIN A

and 400 U. S. P. UNITS

VITAMIN D

A high grade wholesome food
product especially prepared for
use in coffee baking and for other
culinary purposes.

Costs so little that even the mod-
erate budget can provide frozen
desserts and whipped toppings.

Contains not less than 26% solids of:
Fat approximately 6.00%
Protein 7.75%
Carbohydrates 18.75%
Mineral Salts 1.65%

Patents Pending

MANUFACTURED FOR CAROLINE PRODUCTS CO.

LITCHFIELD, ILLINOIS, U. S. A.

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For better flavor and
more inviting appear-
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Carolene with all desserts.



Whipped Carolene
in your favorite recipes
or added to prepared
mixes makes smooth
frozen desserts.
Chill thoroughly before
whipping.



Use Carolene diluted
with an equal amount
of water as a healthful,
appetizing ingredient in
all cooking and baking.

That there is no difference of opinion existing concerning the wholesomeness and sufficiency of defendant's product as a milk compound and the vitamin sufficiency thereof. That there is no foundation in fact for the presumption and charge that defendant's products are adulterated or that the sale of defendant's products is a fraud on the public.

(12) That there is not now being manufactured, and there is not now being sold in Kansas or in any other State, any filled milk, imitation milk, or vitamin-deficient product which might conceivably be mistaken by the public for defendant's product; that there is no fraud in the sale of this product in Kansas or elsewhere; that there are no circumstances attendant to the regulation and sale of foods in Kansas or elsewhere which might possibly give rise to any administrative difficulty because of the sale of defendant's product.

(13) That there is absolutely no detriment to the public health, safety, welfare or morals arising from the manufacture or sale of defendant's products; that there is absolutely no rational basis or foundation for any legislation prohibiting the manufacture, possession or sale of defendant's product.

(14) That at the time of the passage of Section 65-707, G. S. Kan., 1935, there was not in existence or yet discovered or invented any such compound as is sold by defendant under the name of Milnot and Carolene; that this act was aimed solely at milk compounds deficient in essential vitamins or manufactured from unclean constituents; that defendant's product is not within the reason or contemplation of the Legislature and not within

the purview of that act; that the rational basis for the enactment of that law did not permit the prohibition of a compound such as Milnot and Carolene.

(15) That Milnot and Carolene is a unique food compound, manufactured and compounded from the following natural substances in their natural states: (a) skimmed milk, (b) pure, refined cottonseed oil, and (c) pure natural concentrates of Vitamins A and D; that in the compounding of these natural products no other substance is added and nothing is done which is designed to or which does make the resulting product in imitation or semblance of milk, cream or skimmed milk in any of their forms; that each of these substances is wholesome, healthful and nutritious, and compounds produced from these substances are wholesome, healthful and nutritious food products; that Milnot and Carolene is not manufactured, compounded or sold or used as or in imitation or semblance of milk, cream or skimmed milk in any of their forms, but on the contrary, said product is compounded as aforesaid for the sole purpose of creating a unique food compound, wholesome and nutritious and superior to milk in any of its forms as a human food, and unanimously accepted as a wholesome, nutritious, growth-promoting food compound containing more than adequate uniform vitamin content; that said product is superior to milk or evaporated milk in the uniformity and quantity of all vitamins.

That in the compounding of said product the pure skimmed milk, the cottonseed oil and the vitamin concentrates, and each of them, are left undamaged and undisguised in their natural states, except for the evaporation of water therefrom; that the appearance, taste, flavor, color and other characteristics of the compounds, are

the appearance, taste, flavor and color of the natural products used in the manufacture thereof and do not result from any artificial treatment or addition of substances.

That said products so compounded are not manufactured, sold or used in imitation or semblance of milk, cream or skimmed milk, or represented to be in imitation or semblance of milk, cream or skimmed milk, or represented to be milk, cream or skimmed milk, but is manufactured, compounded, sold, used and represented to be a unique food compound resulting from the blending in their natural states of the substances aforesaid; that not only is there no intent to imitate or simulate milk, cream or skimmed milk, but on the contrary, all persons handling and dealing in said product from the manufacturer to the retailer, carefully compound, sell and handle this product in hermetically sealed tins bearing labels which prominently and boldly state the nature of the compound and which prominently and boldly state that said product is a unique cooking compound which is not evaporated milk or cream; that this unique food compound is not in imitation or semblance of milk, cream or skimmed milk in any of its forms; nor is it sold as or for milk, cream or skimmed milk in any form.

(16) The law enforcement agencies of the State of Kansas, including the Attorney General and other law enforcement officers, have been in the past and are now engaged in an attempt to suppress this defendant's product and thereby have deprived and are depriving this defendant of its liberty and property without due process of law and have denied and are denying it the equal protection of the laws of Kansas and have been and are enforcing the laws of Kansas in a manner that abridges the

privileges and immunities of this defendant as a citizen of the United States, all in violation of the First Section of the 14th Amendment to the Constitution of the United States, in the following manner:

(a) Because of the generally known deficiency of whole milk and evaporated whole milk in Vitamins A and D, many dealers and processors of whole milk and evaporated whole milk in the State of Kansas for years have been and are now adding to whole milk and to evaporated whole milk, fish oils similar to the vitamin compounds used by defendant and containing concentrated Vitamins A and D; that the addition of fish oils is made by these dealers and processors in whole milk and evaporated whole milk for the same purpose that high-potency vitamin compounds are added to defendant's product; that many other milk products and fluid derivatives of milk, skimmed milk, condensed milk and evaporated milk to which have been added fats or oils other than milk fat have been and are now being sold in the State of Kansas; that these facts are well known and have been called to the attention of the law enforcing agencies of the State of Kansas; that notwithstanding that whole milk and evaporated whole milk processors and dealers, and the manufacturers and producers of numerous milk products and fluid derivatives of milk, skimmed milk, condensed milk and evaporated milk, are adding these vitamin bearing fish oils and other fats and oils other than milk fat to their products and notwithstanding that they are openly advertising this fact and notwithstanding the knowledge of their practice by the law enforcing agencies of Kansas, said law enforcing agencies have singled out this defendant and are attempting to enforce the statute herein-

before mentioned against this defendant alone; that the Attorney General and other law enforcement agents have notified dealers in Kansas who are selling and distributing this defendant's product, Milnot and Carolene, that the possession and sale thereof is prohibited under Section 65-707, G. S. Kan., 1935. and said law enforcing agents are threatening said dealers with prosecution thereunder because of their possession and sale of said product, while at the same time said law enforcing agencies have knowingly refrained from attempting to enforce said statute against the sale of any other milk product containing any added fat or oil other than butter fat, thereby unreasonably and in the method of enforcement violating the constitutional rights of this defendant hereinbefore mentioned in this paragraph.

(b) With the full knowledge and consent of all of the law enforcing agencies of the State of Kansas, milk processors are abstracting from whole milk the fat thereof and replacing the milk fat so abstracted with a preparation of chocolate flavor and cacao fat and selling the same to school children as well as adults as a healthful milk drink. That the process of making and selling such a compound is within the purview of Section 65-707, G. S. Kan., 1935. Nevertheless, the law enforcement agencies of Kansas, including the Attorney General, the Secretary of Agriculture, and the prosecuting attorneys of the various counties of Kansas, and all of the subordinates of the above mentioned law enforcement agencies, are intentionally and consciously refusing to apply the statute mentioned to those engaged in making said chocolate drink. And at the same time said law enforcing agencies are unlawfully and unconstitutionally discrim-

inating against this defendant by singling out this defendant and attempting to apply said statute only to this defendant, thereby depriving this defendant of its constitutional rights, as hereinabove mentioned.

(c) With the full knowledge and consent of all of the law enforcing agencies of the State of Kansas, milk processors are abstracting from whole milk the fat thereof and replacing the milk fat so abstracted with vegetable oils and vitamin concentrates and selling the same through drug stores without prescription as infant food. That the process of making and selling such a compound is within the purview of Section 65-707, G. S. Kan., 1935. Nevertheless, the law enforcement agencies of Kansas, including the Attorney General, the Secretary of Agriculture, and the prosecuting attorneys of the various counties of Kansas, and all of the subordinates of the above mentioned law enforcement agencies, are intentionally and consciously refusing to apply the statute mentioned to those engaged in making said products. And, at the same time said law enforcing agencies are unlawfully and unconstitutionally discriminating against this defendant by singling out this defendant and attempting to apply said statute only to this defendant, thereby depriving this defendant of its constitutional rights, as hereinabove mentioned.

(d) With the full knowledge and consent of all of the law enforcing agencies of the State of Kansas, milk processors are abstracting from whole milk the fat thereof and replacing the milk fat so abstracted with fish oils and fats and selling the same generally as an infant food under the name Biolac and other names; that the process

of making and selling such a compound is within the purview of Section 65-707, G. S. Kan., 1935. Nevertheless, the law enforcement agencies of Kansas, including the Attorney General, the Secretary of Agriculture, and the prosecuting attorneys of the various counties of Kansas, and all of the subordinates of the above mentioned law enforcement agencies, are intentionally and consciously refusing to apply the statute mentioned to those engaged in making said products. And, at the same time said law enforcing agencies are unlawfully and unconstitutionally discriminating against this defendant by singling out this defendant and attempting to apply said statute only to this defendant, thereby depriving this defendant of its constitutional rights, as hereinabove mentioned.

(c) With the full knowledge and consent of all of the law enforcing agencies of the State of Kansas, milk processors are abstracting from whole milk the fat thereof and replacing the milk fat so abstracted with vegetable oils of every kind and churning the same into margarine and selling the same generally at grocery stores; that the process of making and selling such a compound is within the purview of Section 65-707, G. S. Kan., 1935. Nevertheless, the law enforcement agencies of Kansas, including the Attorney General, the Secretary of Agriculture, and the prosecuting attorneys of the various counties of Kansas, and all of the subordinates of the above mentioned law enforcement agencies, are intentionally and consciously refusing to apply the statute mentioned to those engaged in making such product. And, at the same time said law enforcing agencies are unlawfully and unconstitutionally discriminating against this defendant by

singling out this defendant and attempting to apply said statute only to this defendant, thereby depriving this defendant of its constitutional rights, as hereinabove mentioned.

(17) That it is well known, generally accepted and so alleged herein that there is a decided under consumption in the State of Kansas as well as all other states of the United States of the food factors found in skimmed milk; that the cost of evaporated milk and whole milk containing these food factors is so high that general consumption of a sufficient quantity of the food factors of skimmed milk is impossible on account of those prohibitive prices; that much skimmed milk is wasted, fed to animals, or discarded, and the public is thereby deprived of the benefits of the supply of this highly nutritious and essential food; that the manufacture of defendant's product not only permits utilization of the butter fat in the form of butter and cream after separation, but preserves for the public use at low prices the skimmed milk ~~which would otherwise not be available~~; that thereby a great public benefit rather than detriment accrues through the manufacture and sale of defendant's product.

(18) That defendant's product is sold at a price substantially less than that fixed and maintained by the evaporated milk producers; that by reason thereof, the benefits of the essential food factors of milk are made available to a class of the public from whose reach evaporated whole milk is withheld by the price of evaporated milk; that thereby another public benefit rather than detriment accrues through the sale of defendant's product.

(19) That because of the use to which the skimmed milk is put in the manufacture of defendant's product the manufacturer of defendant's product is able and does pay to the farmer and dairyman for his surplus milk a much higher price than is paid to the farmer by the whole milk evaporator, the fluid whole milk distributor and pasteurizer, or any other processor of milk products, for such milk; that while extending the benefits of milk consumption as aforesaid by producing a cheaper and superior product from the skimmed milk, the manufacturer of defendant's product is at the same time able to increase the income of the farmer and dairyman engaged in the production of milk; that thereby another public benefit rather than detriment accrues by the manufacture and sale of defendant's product.

(20) That the prohibition of the manufacture, sale and possession of Milnot and Carolene, and criminal punishment therefor, notwithstanding that said product is a wholesome, nutritious food product rich in vitamins, is unconstitutional and void for the following reasons:

(a) Such prohibition and punishment under any statute relating thereto and not embracing generally all food containing oil or fat, other than milk fat, or all foods in which milk and oil or fat, other than milk fat, are compounded is in violation of Section 17 of Article II of the Constitution of Kansas, prohibiting the enactment of a special law where a general law can be made applicable.

(b) Such prohibition and punishment violates Section 1 of the Bill of Rights of the Constitution of Kansas by denying to this defendant its natural and constitutional rights of life, liberty and the pursuit of happiness.

(c) Such prohibition and punishment deprives this defendant of its liberty and property without due process of law in violation of the Fourteenth Amendment to the Constitution of the United States, and deprives this defendant of the equal protection of the laws of the State of Kansas in violation of said constitutional provisions, and abridges the privileges and immunities of this defendant, as a citizen of the United States in violation of said constitutional provisions.

(d) The prohibition of the sale of a pure, wholesome, sanitary, nutritious, and unarmful food compound, and punishment therefor, is contrary to public policy, is an arbitrary and unreasonable interference with private persons, is wholly without the scope of the police power, is an unreasonable and unnecessary restriction upon trade, and is therefore unlawful oppressive and unrelated to the health, welfare, safety or morals of the people of this state or any of them.

Wherefore, this defendant prays to be hence dismissed with its costs in this behalf expended.

(Verification.)

(b)

Separate Answer of Defendant. Sage Stores Company.

Comes now the defendant Sage Stores Company, a corporation and files this, its separate answer to plaintiff's amended petition.

I.

This defendant states that the amended petition filed herein is insufficient in law, because:

(1) The amended petition does not state facts sufficient to warrant the granting of any relief against this defendant.

(2) The prohibition of the sale and possession of Milnot and Carolene and punishment therefor, notwithstanding that said article is a wholesome, nutritious food product rich in vitamins, is unconstitutional and void for the following reasons:

(a) Such prohibition and punishment deprives this defendant of its life, liberty and property without due process of law in violation of the Fourteenth Amendment to the Constitution of the United States; and deprives this defendant of the equal protection of the laws of the State of Kansas in violation of said constitutional provision and abridges the privileges and immunities of the defendant as a citizen of the United States in violation of said constitutional provisions.

(b) Such prohibition and punishment violates Section 1 of the Bill of Rights of the Constitution of Kansas by denying to this defendant its natural and constitutional rights of life, liberty and the pursuit of happiness.

(c) Such prohibition and punishment under any statute relating thereto and not embracing generally all foods containing fat or oil other than butter fat is in violation of Section 17 of Article 2 of the Constitution of Kansas prohibiting the passage of a special law where a general law can be made applicable.

(d) The prohibition of the sale of a pure, wholesome, sanitary, nutritious and unharmed food compound, and punishment therefor, is contrary to public policy, is an arbitrary and unreasonable interference with private persons, is wholly without the scope

of the police power and is an unreasonable and unnecessary restriction of trade and is, therefore, unlawful, oppressive and unrelated to the health, welfare, safety or morals of the people of the State or any of them.

(3) That the petition and action is based upon an act of the General Assembly of Kansas known and designated as Section 65-707, G. S. Kan., 1935, which act is unconstitutional and void for each of the reasons hereinabove set out in paragraph I, 2.

II.

This defendant admits the following facts, to-wit:

(1) That it is a corporation duly organized and existing under the laws of the State of Kansas and doing business in the State of Kansas with its principal place of business in Topeka, Kansas.

(2) That it is now a going concern engaged in the business of the retail sale of groceries and meats.

(3) That at the time of the issuance of the restraining order in this cause the defendant had in its possession for sale the product sold under the trade name of Milnut and Carolene, and states that it would now, except for the issuance of said restraining order, have in its possession, be offering for sale and be selling the product manufactured by its co-defendant, Carolene Products Company, which product is sold under the two trade names of Carolene and Milnot, and which product is a compound of pure sweet skim milk, pure bland cottonseed oil, and pure concentrates of Vitamin A and Vitamin D.

III.

This defendant specifically denies the following allegations contained in plaintiff's amended petition:

(1) That it is now doing or has done any acts in the State of Kansas which amount to a surrender and forfeiture of its rights and privileges as a corporation within the State of Kansas.

(2) That it is now abusing its power and exercising powers not conferred upon it by law.

(3) That it is keeping for sale, selling or has in its possession any article or commodity of food, the possession or sale of which is unlawful under the laws of the State of Kansas.

(4) That at the time of the institution of this suit or at any time thereafter it has possessed or sold any of the product manufactured by the Carolene Products Company known as "Milnut" and "Carolene" which contains coconut oil.

IV.

By way of other and further defense, this defendant states the following facts, to-wit:

(1) That Carolene and Milnot, the only product of Carolene Products Company, sold by this defendant, is an identical product except for the trade names under which it is sold; that Carolene and Milnot will be referred to hereafter in this pleading as "said product" or "this product."

(2) That the product, Carolene and Milnot, sold by this defendant is a different product than the product

Carolene and Milnut containing coconut oil and manufactured by Carolene Products Company.

(3) That the food compound, Carolene and Milnut, is a wholesome, nutritious, noninjurious, unadulterated and beneficial food compound; that the sole ingredients of said product are pure, sweet skimmed milk, refined, edible, bland cottonseed oil and certified natural vitamin concentrates; that each of these ingredients is uniformly recognized as a pure, wholesome food in wide use throughout the world by humans; that there is no other ingredient in said product except these pure foods; that in the compounding of these ingredients in the manufacture of said product, the food value and purity of each of the ingredients is not only undamaged but, on the contrary, improved; that this product is manufactured in the modern, sanitary creamery of the Litchfield Creamery Company at Litchfield, Illinois, and at Warsaw, Indiana; that it is manufactured by mixing (a) pure, sweet skimmed milk, (b) refined, bland cottonseed oil of the highest grade, and (c) natural certified vitamin A and Vitamin D concentrates in constant and adequate quantities of the highest grade, purchased from reputable and nationally known tested laboratories; that this mixture is then compounded by a special process, and thereafter evaporated at the Litchfield Creamery Company with the finest modern and sanitary equipment in the same manner as sweet, whole or skimmed milk is evaporated in the manufacture of evaporated milk; that after evaporation, at the end of which the volume of the mixture is reduced to forty per cent of the original volume solely from loss of water, the product is put up in hermetically sealed cans by modern and sanitary canning machinery; that after the canning,

the cans and the product therein are sterilized under steam pressure at 240° F. in the same manner as canned evaporated whole milk is sterilized; that this product is rendered thereby absolutely pure and free of all bacteria and so remains thereafter.

(4) That Carolene and Milnot is superior to whole milk and superior to evaporated whole milk in Vitamin A content and Vitamin D content, in each case both as to uniformity and quantity; that each 14 1/2 ounce can of said product contains 2,000 U. S. P. units of Vitamin A and 400 U. S. P. units of Vitamin D; that this Vitamin A and D content is ideal for human foods of this type and renders this product superior to whole milk or evaporated whole milk as a source of Vitamin A and Vitamin D for human needs; that whole milk and evaporated whole milk as compared to this product are inferior and deficient in Vitamin D content and Vitamin A content both as to uniformity and quantity, the quantity and quality of the Vitamin A and Vitamin D content of whole milk fluctuating with the season, the feed of the cow, the breed of the cow and the condition of the cow.

(5) That with respect to the remaining vitamins present in whole milk or evaporated whole milk said product is demonstrably superior; that Vitamins A and D are the fat soluble vitamins of whole milk; that the remaining vitamins of whole milk are water soluble; that these water soluble vitamins are present in this product in far greater amounts and concentration than in an equal amount of whole milk or evaporated whole milk.

(6) That the pure refined cottonseed oil present in said product is a pure, wholesome, nutritious and bene-

ificial food highly suitable for human consumption and superior to butter fat in digestibility, growth promotion, food value and in every other respect; that there have been such great advances in the transportation, manufacture and refinement of cottonseed oil in the past ten years that cottonseed oil has been rendered the most desirable fat known to man for human consumption; that pure refined cottonseed oil has been used extensively for the past ten years and is now used throughout the world, as well as in this country, in the manufacture and compounding of too many foods and food compounds to be enumerated here, but which include salad dressings, margarines, infant foods, shortenings, salad oils and many other prime foods of the United States.

(7) That while pure, refined cottonseed oil has always been a leading article of food, wholesome, nutritious and beneficial for the human race, such great strides have been made in the process of refinement that pure, refined cottonseed oil is absolutely sterile, bland, clean, wholesome and uniformly nutritious; that cottonseed oil is not only noninjurious, but is a human food superior to butter fat in digestibility, and promotion of growth, and in all other nutritional characteristics; that when fortified as in defendant's product with vitamins A and D, cottonseed oil is superior to butter fat in the fat soluble and fat borne vitamins.

(8) That ordinary sweet whole milk consists of approximately 4% fat and 96% skimmed milk; that the skimmed milk consists of water containing in solution the essential valuable parts of the milk, namely, the proteins, carbohydrates (milk sugars), valuable minerals, and

the water soluble vitamins; that all the vitamins contained in milk are water soluble except Vitamins A and D, which are fat soluble, and which are contained in the fat; that the removal of the fat by separation leaves skimmed sweet milk containing the principal food values of the milk and all the water soluble vitamins; that the skimmed milk present in said product is reduced by evaporation to forty per cent of the original volume; that because of the evaporation it contains the food elements and vitamins of the ordinary skimmed milk in concentration two and one-quarter times the amount of ordinary skimmed milk.

(9). That the fat soluble Vitamins A and D introduced in said product are secured from nationally known, reputable laboratories which have extracted these vitamins from prime natural sources such as fish livers and prepared these concentrates of readily available vitamins for use in human food and for medical purposes.

(10). That said product is a pure food compound containing approximately the following chemical constituents:

Fat	approximately	6.00%
Protein	"	7.75%
Carbohydrates	"	10.75%
Mineral Salts	"	1.65%
Water	"	73.85%

(11) That said product has been widely used in the United States by housewives and dieticians and others engaged in the preparation of foods, and has been found highly satisfactory in Kansas and in every other state in which it has been sold or used; that in addition to this

practical experience, actual disinterested scientific experiments have been conducted for the public benefit from time to time by the Massachusetts Institute of Technology, through its department of Bio-Chemistry, which has at all times found this product to be a wholesome and nutritious food compound superior to evaporated milk or whole milk in every respect, and the sale thereof to be a decided public benefit, and this defendant so alleges the facts to be. In addition, disinterested scientific experiments conducted by the Laboratory of Vitamin Technology of Chicago, have shown said product to be uniformly healthful, growth-promoting, and superior to whole milk or evaporated whole milk in every respect. This defendant further states that biochemists, physicians, pediatricians, dieticians and nutritionists throughout this country have made extensive investigation into the composition and use of said product, and have unanimously found it to be wholesome, healthful, growth-promoting, nutritious and beneficial generally as a food in every respect; that said product as well as similar preparations and compounds, is unusually well fitted as infant food; that in many cases, where evaporated whole milk and whole milk cannot be fed to infants, this product is readily usable and satisfactory that said product complies in all respects with the Federal food and drug laws and with all Kansas laws relating to and prohibiting the adulteration and misbranding of food products; that all of said product sold by this defendant is properly and plainly labelled, with a prominent warning that the product is not evaporated milk or cream; that the uniform label used on said product is as follows:

(The labels are shown at page 17 of this abstract.)

That there is no difference of opinion existing concerning the wholesomeness and sufficiency of said product as a milk compound and the vitamin sufficiency thereof; that there is no foundation in fact for the presumption and charge that said product is adulterated or that the sale of said product is a fraud on the public.

(12) That there is not now being manufactured, and there is not now being sold in Kansas or in any other State, any filled milk, imitation milk, or vitamin-deficient product which might conceivably be mistaken by the public for said product; that there is no fraud in the sale of this product in Kansas or elsewhere; that there are no circumstances attendant to the regulation and sale of foods in Kansas or elsewhere which might possibly give rise to any administrative difficulty because of the sale of said product.

(13) That there is absolutely no detriment to the public health, safety, welfare or morals arising from the manufacture or sale of said products; that there is absolutely no rational basis or foundation for any legislation prohibiting the manufacture, possession or sale of said product.

(14) That at the time of the passage of Section 65-707 G. S. Kan., 1935, there was not in existence or yet discovered or invented any such compound as is sold by defendant under the name of Milnot and Carolene; that this act was aimed solely at milk compounds deficient in essential vitamins or manufactured from unclean constituents; that said product is not within the reason or contemplation of the Legislature and not within the purview of that act; that the rational basis for the enact-

ment of that law did not permit the prohibition of a compound such as Milnot and Carolene.

(15) That Milnot and Carolene is a unique food compound, manufactured and compounded from the following natural substances in their natural states: (a) skimmed milk, (b) pure, refined cottonseed oil, and (c) pure natural concentrates of Vitamins A and D; that in the compounding of these natural products no other substance is added and nothing is done which is designed to or which does make the resulting product in imitation or semblance of milk, cream or skimmed milk in any of their forms; that each of these substances is wholesome, healthful and nutritious, and compounds produced from these substances are wholesome, healthful and nutritious food products; that Milnot and Carolene is not manufactured, compounded or sold or used as or in imitation or semblance of milk, cream or skimmed milk in any of their forms, but on the contrary, said product is compounded as aforesaid for the sole purpose of creating a unique food compound, wholesome and nutritious and superior to milk in any of its forms as a human food, and unanimously accepted as a wholesome, nutritious, growth-promoting food compound containing more than adequate uniform vitamin content; that said product is superior to milk or evaporated milk in the uniformity and quantity of all vitamins.

That in the compounding of said product the pure skimmed milk, the cottonseed oil and the vitamin concentrates, and each of them, are left undamaged and undisguised in their natural states, except for the evaporation of water therefrom; that the appearance, taste, flavor,

color and other characteristics of the compounds, are the appearance, taste, flavor and color, of the natural products used in the manufacture thereof and do not result from any artificial treatment or addition of substances.

That said product so compounded is not manufactured, sold or used in imitation or semblance of milk, cream or skimmed milk, or represented to be in imitation or semblance of milk, cream or skimmed milk, or represented to be milk, cream or skimmed milk, but is manufactured, compounded, sold, used and represented to be a unique food compound resulting from the blending in their natural states of the substances aforesaid; that not only is there no intent to imitate or simulate milk, cream or skimmed milk, but on the contrary, all persons handling and dealing in said product from the manufacturer to the retailer, carefully compound, sell and handle this product in hermetically sealed tins bearing labels which prominently and boldly state the nature of the compound and which prominently and boldly state that said product is a unique cooking compound which is not evaporated milk or cream; that this unique food compound is not in imitation or semblance of milk, cream or skimmed milk in any of its forms, nor is it sold as or for milk, cream or skimmed milk in any form.

(16) The law enforcement agencies of the State of Kansas, including the Attorney General and other law enforcement officers, have been in the past and are now engaged in an attempt to suppress said product and thereby have deprived and are depriving this defendant of its liberty and property without due process of law and have denied and are denying it the equal protection of the

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laws of Kansas and have been and are enforcing the laws of Kansas in a manner that abridges the privileges and immunities of this defendant as a citizen of the United States, all in violation of the First Section of the Fourteenth Amendment to the Constitution of the United States, in the following manner:

(a) Because of the generally known deficiency of whole milk and evaporated whole milk in Vitamins A and D, many dealers and processors of whole milk and evaporated whole milk in the State of Kansas for years have been and are now adding to whole milk and to evaporated whole milk, fish oils similar to the vitamin compounds used in this product and containing concentrated Vitamins A and D; that the addition of fish oils is made by these dealers and processors in whole milk and evaporated whole milk for the same purpose that high-potency vitamin compounds are added to this product; that many other milk products and fluid derivatives of milk, skimmed milk, condensed milk and evaporated milk to which have been added fats or oils other than milk fat have been and are now being sold in the State of Kansas; that these facts are well known and have been called to the attention of the law enforcing agencies of the State of Kansas; that notwithstanding that whole milk and evaporated whole milk processors and dealers, and the manufacturers and producers of numerous milk products and fluid derivatives of milk, skimmed milk, condensed milk and evaporated milk, are adding these vitamin bearing fish oils and other fats and oils other than milk fat to their products, and notwithstanding that they are openly advertising this fact and notwithstanding the knowledge of

their practice by the law enforcing agencies of Kansas, said law enforcing agencies have singled out this defendant and are attempting to enforce the statute hereinbefore mentioned against this defendant alone; that the Attorney General and other law enforcement agents have notified this defendant and other dealers in Kansas who are selling and distributing this product, Milnot and Caroleene, that the possession and sale thereof is prohibited under Section 65-707, G. S. Kan., 1935, and said law enforcement agents are threatening said dealers with prosecution thereunder because of their possession and sale of said product, while at the same time said law enforcement agencies have knowingly refrained from attempting to enforce said statute against the sale of any other milk product containing any added fat or oil other than butter fat, thereby unreasonably and in the method of enforcement violating the constitutional rights of this defendant hereinbefore mentioned in this paragraph.

(b) With the full knowledge and consent of all of the law enforcement agencies of the State of Kansas, milk processors are abstracting from whole milk the fat thereof and replacing the milk fat so abstracted with a preparation of chocolate flavor and cacao fat and selling the same to school children as well as adults as a healthful milk drink; that the process of making and selling such a compound is within the purview of Section 65-707, G. S. Kan., 1935. Nevertheless, the law enforcement agencies of Kansas, including the Attorney General, the Secretary of Agriculture, the Dairy Commissioner, and the prosecuting attorneys of the various counties of Kansas, and all of the subordinates of the above mentioned law enforce-

ment agencies, are intentionally and consciously refusing to apply the statute mentioned to those engaged in making said chocolate drink. And at the same time said law enforcement agencies are unlawfully and unconstitutionally discriminating against this defendant by singling out this defendant and attempting to apply said statute only to this defendant, thereby depriving this defendant of constitutional rights, as hereinabove mentioned.

(c) With the full knowledge and consent of all of the law enforcement agencies of the State of Kansas, milk processors are abstracting from whole milk the fat thereof and replacing the milk fat so abstracted with vegetable oils and vitamin concentrates and selling the same through drug stores without prescription as infant foods; that the process of making and selling such a compound is within the purview of Section 65-707, G. S. Kan., 1935. Nevertheless, the law enforcement agencies of Kansas, including the Attorney General, the Secretary of Agriculture, the Dairy Commissioner, and the prosecuting attorneys of the various counties of Kansas, and all of the subordinates of the above mentioned law enforcement agencies, are intentionally and consciously refusing to apply the statute mentioned to those engaged in making said products. And, at the same time said law enforcement agencies are unlawfully and unconstitutionally discriminating against this defendant by singling out this defendant and attempting to apply said statute only to this defendant, thereby depriving this defendant of its constitutional rights, as hereinabove mentioned.

(d) With the full knowledge and consent of all of the law enforcement agencies of the State of Kansas, milk

processors are abstracting from whole milk the fat thereof and replacing the milk fat so abstracted with fish oils and fats and selling the same generally as an infant food under the name Biolac and other names; that the process of making and selling such a compound is within the purview of Section 65-707, G. S. Kan., 1935. Nevertheless, the law enforcement agencies of Kansas, including the Attorney General, the Secretary of Agriculture, the Dairy Commissioner, and the prosecuting attorneys of the various counties of Kansas, and all of the subordinates of the above mentioned law enforcement agencies, are intentionally and consciously refusing to apply the statute mentioned to those engaged in making said products. And, at the same time said law enforcement agencies are unlawfully and unconstitutionally discriminating against this defendant by singling out this defendant and attempting to apply said statute only to this defendant, thereby depriving this defendant of its constitutional rights, as hereinabove mentioned.

(e) With the full knowledge and consent of all of the law enforcement agencies of the State of Kansas, milk processors are abstracting from whole milk the fat thereof and replacing the milk fat so abstracted with vegetable oils of every kind and churning the same into margarine and selling the same generally at grocery stores; that the process of making and selling such a compound is within the purview of Section 65-707, G. S. Kan., 1935. Nevertheless, the law enforcement agencies of Kansas, including the Attorney General, the Secretary of Agriculture, the Dairy Commissioner and the prosecuting attorneys of the various counties of Kansas, and all of the sub-

ordinates of the above mentioned law enforcement agencies, are intentionally and consciously refusing to apply the statute mentioned to those engaged in making such product. And, at the same time said law enforcement agencies are unlawfully and unconstitutionally discriminating against this defendant by singling out this defendant and attempting to apply said statute only to this defendant, thereby depriving this defendant of its constitutional rights, as hereinabove mentioned.

(17) That it is well known, generally accepted and so alleged herein that there is a decided under-consumption in the State of Kansas as well as all other states of the United States of the food factors found in skimmed milk; that the cost of evaporated milk and whole milk containing these food factors is so high that general consumption of a sufficient quantity of the food factors of skimmed milk is impossible, on account of these prohibitive prices; that much skimmed milk is wasted, fed to animals, or discarded, and the public is thereby deprived of the benefits of the supply of this highly nutritious and essential food; that the manufacture of the product here complained of not only permits utilization of the butter fat in the form of butter and cream, after separation, but preserves for the public use at low prices the skimmed milk which would otherwise not be available; that thereby a great public benefit rather than detriment accrues through the manufacture and sale of said product.

(18) That said product is sold at a price substantially less than that fixed and maintained by the evaporated milk producers; that by reason thereof the benefits of the essential food factors of milk are made avail-

able to a class of the public from whose reach evaporated whole milk is withheld by the price of evaporated milk; that thereby another public benefit rather than detriment accrues through the sale of said product.

(19) That because of the use to which the skimmed milk is put in the manufacture of said product the manufacturer of said product is able and does pay to the farmer and dairyman for his surplus milk a much higher price than is paid to the farmer by the whole milk evaporator, the fluid whole milk distributor and pasteurizer, or any other processor of milk products, for such milk; that while extending the benefits of milk consumption as aforesaid by producing a cheaper and superior product from the skimmed milk, the manufacturer of said product is at the same time able to increase the income of the farmer and dairyman engaged in the production of milk; that thereby another public benefit rather than detriment accrues by the manufacture and sale of said product.

(20) That the prohibition of the manufacture, sale and possession of Milnot and Carolene, and criminal punishment therefor, notwithstanding that said product is a wholesome, nutritious food product rich in vitamins, is unconstitutional and void for the following reasons:

(a) Such prohibition and punishment under any statute relating thereto and not embracing generally all food containing oil or fat, other than milk fat, or all foods in which milk and oil or fat, other than milk fat, are compounded is in violation of Section 17 of Article II of the Constitution of Kansas, prohibiting the enactment of a special law where a general law can be made applicable.

(b) Such prohibition and punishment violates Section 1 of the Bill of Rights of the Constitution of Kansas by denying to this defendant its natural and constitutional rights of life, liberty and the pursuit of happiness.

(c) Such prohibition and punishment deprives this defendant of its liberty and property without due process of law in violation of the Fourteenth Amendment to the Constitution of the United States, and deprives this defendant of the equal protection of the laws of the State of Kansas in violation of said constitutional provisions, and abridges the privileges and immunities of this defendant as a citizen of the United States in violation of said constitutional provisions.

(d) The prohibition of the sale of a pure, wholesome, sanitary, nutritious, and unharmed food compound, and punishment therefor, is contrary to public policy, is an arbitrary and unreasonable interference with private persons, is wholly without the scope of the police power, is an unreasonable and unnecessary restriction upon trade, and is therefore unlawful, oppressive and unrelated to the health, welfare, safety or morals of the people of this state or any of them.

Wherefore, this defendant prays to be hence dismissed with its costs in this behalf expended.

Verification.

Replies.

(a)

Plaintiff's Reply to the Separate Answer of Defendant, Carolene Products Company.

Comes now the plaintiff and for its reply to the separate answer of the defendant, Carolene Products Company, alleges:

I.

That plaintiff denies each and every allegation of defendant, Carolene Products Company's, answer, except such facts as are expressly hereinafter admitted.

II.

Plaintiff admits that the Carolene Products Company is a corporation organized under the laws of the State of Michigan for the purpose of engaging in the compounding and distribution of evaporated skim milk and fats and oils other than milk fat and admits that it is not authorized to do business in the State of Kansas.

Plaintiff further admits that the Carolene Products Company's product, Milnot and Carolene, is sold in the State of Kansas and that said company is interested in the question of whether or not its product, Milnot and Carolene, may be lawfully sold by persons transacting business in the State of Kansas.

Plaintiff further admits that the Carolene Products Company's product is manufactured in Litchfield, Illinois, by the Litchfield Creamery Company and at Warsaw, Indiana. That defendant's product is manufactured by mixing skim milk, cotton seed oil and Vitamin A and Vitamin

D concentrates. That this mixture is evaporated and the volume of the mixture reduced solely from loss of water and that the product is then put in hermetically sealed cans. That the cans and the product therein are then sterilized under steam pressure at 240° Fahrenheit. That each 14 1/2-ounce can of defendant's product contains 2,000 U. S. P. units of Vitamin A and 400 U. S. P. units of Vitamin D.

Plaintiff further admits defendant, Carolene Products Company's, allegation under paragraph IV (1) that Carolene and Milnot are identical except for trade names and that said product is sold by said defendant in Kansas.

Plaintiff further admits that Vitamins A and D, introduced in defendant's product, have been extracted from sources such as fish livers.

Plaintiff further admits that defendant, Carolene Products Company's, product contains approximately the following chemical constituents:

Fat (Other than butter fat)	Approximately	6.00%
Protein	"	7.75%
Carbohydrates	"	10.75%
Mineral Solids	"	1.65%
Water	"	73.85%

III.

By way of further reply, plaintiff states that the allegations of defendant, Carolene Products Company's, answer, numbered IV (16), (a), (b), (c), (d), and (e) do not constitute a defense to plaintiff's petition, that said allegations are surplusage, argumentative and do not raise any issue of fact or law and therefore should be by the court stricken from defendant's answer.

That Paragraph IV (17), (18), and (19), contained in defendant, Carolene Products Company's, answer do not set forth or constitute a defense to plaintiff's petition, that said allegations are surplusage, argumentative and do not raise any issue of fact or law and therefore should be by the court stricken from defendant's answer.

IV.

1. By way of further reply, plaintiff states and alleges that defendant, Carolene Products Company's, product, consisting of evaporated skim milk, cotton seed oil and Vitamins A and D, is the identical product heretofore condemned by this court in the case of *Carolene Products Company v. J. C. Mohler et al.*, No. 34307, with the exception that defendant's product now contains cotton seed oil where the product in the above named case contained coconut oil. That said product sold in Kansas containing coconut oil was sold under the trade names of Carolene and Milnut. That defendant's product, containing cotton seed oil, has been and is being sold under the trade names of Carolene, Milnut and Milnot, but that the constituents of said product are identical and that different trade names or labels upon the package containing the product do not change the product nor do they circumvent the prohibition of the statute, the sale of which product is unlawful either under the name of said product or any fictitious or trade name whatsoever.

2. That the defendant, Carolene Products Company's, product containing oil and fat other than milk fat is not milk. That said product of defendant is inferior to the natural product, milk. That the prohibition of the statute protecting the public health, morals and welfare of the

people violates no provisions of the state or federal constitutions. That said statute is for the preservation of the public health and the prevention of fraud and deception upon the people of this state.

3. That the manufacture, sale, keeping for sale or having in possession with intent to sell or exchange compounds of evaporated skim milk and fats and oils other than milk fat in the State of Kansas, for the distribution and sale of which the defendant, Carolene Products Company, in Paragraph numbered II, alleges it is organized, contravenes the statute of Kansas, whether said fat or oil is coconut oil, cotton seed oil, soy bean oil, corn oil, peanut oil or any other fat or oil, for the sale and distribution of which defendant alleges it is organized and authorized to engage.

That milk, cream, condensed or evaporated milk and powdered milk are superior human foods to any compound of skim milk to which has been added any fat or oil other than milk fat whether such oil or fat is coconut oil, cotton seed oil, soy bean oil, corn oil, peanut oil or any other fat or oil and whether said compound is sold under the trade name of Carolene, Milnut or Milnot or any other trade name whatsoever.

That said statute of Kansas does not violate any of the provisions of the Constitution of Kansas or any of the provisions of the Constitution of the United States in its prohibition that fats or oils other than milk fat shall not be added to milk, cream, skim milk, butter milk, condensed or evaporated milk, powdered milk, condensed skim milk or any of the fluid derivatives of any of them, whether said fat or oil is coconut oil, cotton seed oil, soy bean oil, corn oil, peanut oil or any other fat or

oil, and whether or not said compound is manufactured and sold under the trade name of Carolene, Milnut or Milnot or any other trade name whatsoever.

That said statute of Kansas prohibits the manufacture, sale, keeping for sale or having in possession with intent to sell or exchange any evaporated skim milk to which has been added any oil or fat other than milk fat whether such oil or fat is coconut oil or cotton seed oil or any other fat or oil that might be added by the defendant, Carolene Products Company, in its manufacture, sale and distribution of compounds of evaporated skim milk to which have been added fats and oils other than milk fat in the carrying on of its corporate power and authority.

That the statute of Kansas preserves the public health and prevents fraud and deception in the purchase and consumption of milk, cream and other dairy products.

Wherefore, plaintiff, having fully replied, renews the prayer of plaintiff's petition.

(b)

Plaintiff's Reply to the Separate Answer of Defendant, The Sage Stores Company's Answer.

Comes now the plaintiff and for its reply to the separate answer of the defendant, The Sage Stores Company, alleges:

I.

That plaintiff denies each and every allegation of the defendant, The Sage Stores Company's, answer, except such facts as are expressly hereinafter admitted.

II.

Plaintiff admits defendant, The Sage Stores Company's, allegations contained under Paragraph numbered II (1), (2) and (3).

III.

Plaintiff, further replying, adopts by reference plaintiff's reply to the separate answer of the defendant, Carolene Products Company, in Paragraphs numbered II, III and IV.

Wherefore, plaintiff, having fully replied, renews the prayer of plaintiff's petition.

4.

Motion for Determination of Questions of Law.

Comes now the plaintiff in the above entitled action and moves the court to determine in advance of trial as a matter of law whether those portions of the separate answers of each defendant should be stricken, which plaintiff in plaintiff's reply alleged do not constitute a defense as more fully set out in Paragraphs Numbered III and IV of plaintiff's reply to the separate answer of the defendant, Carolene Products Company.

5.

Ruling of Court Striking Paragraph IV (16) of Defendants' Answers.

Order.

On the same day comes on for consideration the state's motion to strike from the answer of the defendant, The Sage Stores Company, a corporation, certain

portions of Paragraph IV thereof, designated thus, subparagraphs (16) a, b, c, d, and e, and the Court being fully advised thereon, sustains said motion; and the state's motion aimed at similar matter pleaded in the answer, of the defendant, Carolene Products Company, a corporation, is likewise sustained, and in all other respects said motions are denied.

By order of Court, this 21st day of May, 1941.

6.

Supplemental Answers.

After all testimony was taken the defendants, by leave of court, filed the following supplemental answers:

(a)

Supplemental Separate Answer of Defendant, Carolene Products Company.

Comes now the defendant Carolene Products Company and with leave of Court files this its Supplemental Separate Answer to Plaintiff's Amended Petition.

For supplemental answer to plaintiff's amended petition this defendant states:

(1) That the prohibition of the sale and possession of Milnot and Carolene and punishment therefor is unconstitutional and in violation of the 14th Amendment to the Constitution of the United States and of Section 17, Article II, and Section 1 of the Bill of Rights of the Constitution of Kansas in that the action of the state in prohibiting the sale and possession for sale of Milnot and Carolene and permitting the sale for infant and human food of other combinations of dried skim milk and vegetable oils constitutes arbitrary and unreasonable discrimination

against this defendant and denies this defendant equal protection of the laws, and constitutes the unreasonable enactment of a special law where a general law can be made applicable. For these reasons Section 65-707, G. S. Kan., 1935, is unconstitutional under the Constitution of Kansas and the Constitution of the United States, and it appears therefrom that the act is not a health measure.

(2) That the prohibition of the sale and possession of Milnot and Carolene and punishment therefor is unconstitutional and in violation of the 14th amendment to the Constitution of the United States and of Section 17, Article II, and Section 1 of the Bill of Rights of the Constitution of Kansas in that the action of the State in prohibiting the sale and possession of liquid combinations of milk, skim milk, and milk derivatives, and vegetable oils and permitting the sale of dried combinations of milk, skim milk, and milk derivatives, and vegetable oil constitutes arbitrary and unreasonable discrimination against this defendant and denies this defendant equal protection of the laws, and constitutes the unreasonable enactment of a special law where a general law can be made applicable. For these reasons Section 65-707, G. S. Kan., 1935, is unconstitutional under the Constitution of Kansas and the United States, and it appears therefrom that the act is not a health measure.

Wherefore, Defendant renews its prayer for judgment herein.

(b)

Supplemental Separate Answer of Defendant, The Sage Stores Company, a Corporation.

Comes now the defendant, The Sage Stores Company, a corporation and with leave of Court files this its Sup-

plemental Separate Answer to Plaintiff's Amended Petition.

For supplemental answer to plaintiff's amended petition this defendant states:

(1). That the prohibition of the sale and possession of Milnot and Carolene and punishment therefor is unconstitutional and in violation of the Fourteenth Amendment to the Constitution of the United States and of Section 17, Article II, and Section 1 of the Bill of Rights of the Constitution of Kansas in that the action of the state in prohibiting the sale and possession for sale of Milnot and Carolene and permitting the sale for infant and human food of other combinations of dried skim milk and vegetable oils constitutes arbitrary and unreasonable discrimination against this defendant and denies this defendant equal protection of the laws, and constitutes the unreasonable enactment of a special law where a general law can be made applicable. For these reasons Section 65-707, G. S. Kan., 1935, is unconstitutional under the Constitution of Kansas and the Constitution of the United States, and it appears therefrom that the act is not a health measure.

(2) That the prohibition of the sale and possession of Milnot and Carolene and punishment therefor is unconstitutional and in violation of the Fourteenth Amendment to the Constitution of the United States and of Section 17, Article II, and Section 1 of the Bill of Rights of the Constitution of Kansas in that the action of the State in prohibiting the sale and possession of liquid combinations of milk, skim milk, and milk derivatives, and vegetable oils and permitting the sale of dried combinations

of milk, skim milk, and milk derivatives, and vegetable oil constitutes arbitrary and unreasonable discrimination against this defendant and denies this defendant equal protection of the laws, and constitutes the unreasonable enactment of a special law where a general law can be made applicable. For these reasons Section 65-707, G. S. Kan., 1935, is unconstitutional under the Constitution of Kansas and the United States, and it appears therefrom that the act is not a health measure.

Wherefore, Defendant renews its prayer for judgment herein.

B.

APPOINTMENT OF HONORABLE J. B. McKAY AS COMMISSIONER.

Now comes the plaintiff, by its written motion, and informs the court that issues of fact are joined by the pleadings upon which the parties cannot agree and moves the court for the appointment of a commissioner to take testimony in the above entitled cause; and thereupon, after due consideration by the court, it is ordered: that J. B. McKay of El Dorado, Butler County, Kansas, be and he is hereby appointed Commissioner of this court to take testimony in the above entitled cause. The said Commissioner is hereby authorized and empowered to administer oaths, to summon witnesses, and to compel their attendance and the giving of their testimony before him; to preserve order at the place where such testimony is being taken, to hear and record the testimony, to make findings of fact therefrom and conclusions thereon, and do all other necessary and requisite things for the carrying out of

his duties as Commissioner. The said Commissioner is hereby required to file his oath of office in the office of the Clerk of the Supreme Court; to commence the taking of testimony without unnecessary delay, at such times and places as he shall determine, and that as soon after the conclusion of the taking of testimony as is reasonably possible, that he shall file in the office of the Clerk of the Supreme Court his report of the testimony so taken, his findings of fact and his conclusions of law.

C.

HEARING BEFORE COMMISSIONER.

1.

Statements of Parties As to Issues and Proof.

(a)

Plaintiff's Statement of the Case.

To the Supreme Court Commissioner in the above entitled matter, J. B. McKay:

Plaintiff incorporates, as a part of his statement of the case, the plaintiff's petition and reply in this case as set forth in full.

This case involves the constitutionality of the so-called Kansas Filled Milk Act, being Subsection 2, Paragraph (F) (1) of Chapter 65-707, 1939 Supplement to G. S., 1935, which is a part of the General Dairy Code enacted in 1923 and amended in some other particulars but which section has remained the same since said date. This section of the statute was upheld in the recent case of *Carolene Products Company v. J. C. Mohler et al.*, 152 Kan.

2. This particular section reads:

"It shall be unlawful to manufacture, sell, keep for sale, or have in possession with intent to sell or exchange, any milk, cream, skimmed milk, butter-milk, condensed or evaporated milk, powdered milk, condensed skimmed milk or any of the fluid derivatives of any of them to which has been added any fat or oil other than milk fat either under the name of said products or articles or the derivatives thereof or under any fictitious or trade name whatever."

It may be well to call to the commissioner's attention at this time the definition of milk as contained in 65-707, 1939 Supplement to G. S., 1935, Subsection (A) (1), reading:

"Whole milk is the lacteal secretion obtained by the complete milking of one or more healthy cows, properly fed and kept, excluding that obtained within fifteen days before and five days after calving, and when offered for sale must contain not less than three and one-fourth per cent of butterfat; (2) Milk for manufacturing purposes may contain less than three and one-fourth per cent of butterfat but must be delivered pure, sweet and clean; (3) For the purpose of this act, skimmed milk shall be considered to be such milk as has had all or a portion of the butterfat removed;

(B) (1) Cream is that portion of milk, rich in butterfat which rises to the surface of the milk on standing or separated from it by centrifugal force and contains not less than eighteen per cent of butterfat."

This statute prohibits the manufacture, sale or possession with intent to sell within the State of Kansas of any milk or other dairy product to which has been added any fat or oil other than milk fat. The defendant, Sage Stores Company, a Kansas corporation, engaged in the

retail grocery business was and does seek to continue to sell a product distributed by the defendant, Carolene Products Company, a Michigan corporation, within the State of Kansas which product is composed of evaporated skimmed milk to which has been added six per cent cottonseed oil and fortified, according to the label on the can containing said product, by the addition of two thousand U. S. P. units of Vitamin A and four hundred U. S. P. units of Vitamin D.

Plaintiff will show that said Sage Stores Company has been selling said product in said state, that the sale of a product containing an oil or fat other than milk fat violates the above Kansas Filled Milk Act and that said corporation is therefore abusing its authority as a corporation and is subject to an order of the court restraining it from usurping franchises and privileges not granted to it by the state and that the Carolene Products Company, who is interested in said sale of the product within said state and who is made a defendant in said suit because it is interested in said product sold by it within the state, is participating in causing said product to be disposed of within the state and will show that the sale of its product should be adjudged to be in violation of the statute.

Conceding for a moment, for the purpose of this statement, that defendants may produce evidence tending to establish that its product is wholesome and nutritious, the State will show beyond question of a doubt that the proposition of the wholesomeness and nutritious nature of defendant, Carolene Products Company's, product is a debatable question upon which reasonable men differ and that by the creation of such doubt, the court is bound by

the legislative findings imposed in the statute involved in this litigation.

The State proposes to prove:

1. That the article produced and sold by said defendants in this case is not wholesome and nutritious regardless of the type of oil or fat that is substituted for butterfat.
2. That said product is deceptively and fraudulently sold as genuine evaporated whole milk; and
3. That the sale of said product, in addition, would destroy a large dairy industry consisting of more than 150,000 dairy farmers who produce milk for sale within this state which dairy industry is a necessary industry to the maintenance of the vitality, health and welfare of the people of the state.

The State will prove that milk has been recognized as a universal food for human beings since the creation of man, and the most essential single factor in the diet of infants.

The State will prove that safeguards covering the production, manufacture and sale of milk and other dairy products in the State of Kansas have been adopted by our legislature and enforced in this state since the inception of the state.

The State will prove that the product sought to be sold in this state by the defendants is a synthetic substitute or alleged substitute for milk which by its very artificial nature can never be an adequate substitute for genuine milk.

The State will show that this product is fraudulently and deceptively sold to consumers as genuine evaporated milk, and that in many instances the actual persons making the sale, including the owners of retail stores and the clerks in such stores, did not themselves know that this article which they were selling for milk was not, in fact, evaporated milk.

The State will show that the product is extensively advertised as milk, and has been bought by consumers under the mistaken belief that they were actually purchasing milk, and that consumers, under such impression, used it in their households in the place of milk, both in the adult diet as well as the diet of infants.

The State will show that the product is packed in hermetically sealed containers of the same size and shape as those used for packing genuine evaporated whole milk; that the product, when stripped of its container, is similar in appearance, consistency, odor and taste to genuine evaporated whole milk, thus rendering the product capable and susceptible of a marked degree of deception which cannot be detected by the average lay person, cannot be determined by application of ordinary methods of analysis, and can be detected only by costly and complete chemical analyses and vitamin assays.

The State will further show that the evil to which the statute is directed is not limited to sales of synthetic or artificial milk in cans such as are produced by defendants, but also that the public will be further endangered by the manufacture of synthetic or artificial milk, cream, ice cream, cheese or butter, made under conditions which would make it impossible for the consumer, through the exercise of the normal faculties, to determine the

synthetic and artificial product from the genuine dairy product.

The State will further prove that dairying is one of the primary industries in the state; that more than 151,000 farmers in this state engage in the production of milk, and that these farmers have an investment in lands and buildings used for dairying in excess of \$450,000,000, and a further investment of more than \$80,000,000 in cows and heifers kept for milk producing purposes; that more than 13,000,000 acres of farm lands of this state are required for dairying, and that dairying is the second most important industry in this state to producers from a standpoint of both gross income and cash income, representing twenty-five per cent of the total agricultural income of the farmers of the State of Kansas.

The State will contend that, in addition to its general authority to prohibit the manufacture and sale, within this state, of any article the manufacture and sale of which is injurious to the general public health, welfare and morals, that it possesses the further authority to prohibit the manufacture and sale within the State of Kansas of any article which unfairly competes or has a tendency to destroy the property or income of substantial groups of the citizens of this state; that the preservation of a strong, financially sound dairy industry is vital and necessary to the maintenance of health and the welfare of the people; that the milk industry is one affected with a public interest; that there is no conceivable subject of legislation more peculiarly within the state police power than that of aiding, maintaining and otherwise encouraging a sound and economic dairy industry.

The State contends that the statute here attacked by the defendants is presumed constitutional and the burden is upon the defendants to show beyond all reasonable doubt that it is unconstitutional. The State will prove beyond doubt that the statute involved is lawful exercise of the state police power. The State contends that the statute involved is not unreasonable or arbitrary, and does not deprive the defendants of property without the due process of law.

The State contends that defendants' commerce in filled milk in the State of Kansas is illegal; that their property in the state, if any they have, has been created or established in violation of law; and the State contends that, under the facts it expects to prove, this court should not, indeed may not, protect an illegal business or property used for an unlawful purpose in direct violation of the law of this state.

(b)

Defendants' Statement of the Case.

This proceeding, an action in *quo warranto*, involves the legality of the sale in Kansas of a food compound sold under the trade names of Milnot and Carolene. The suit was instituted on the relation of the Attorney General against The Sage Stores Company and Carolene Products Company, charging them with violating Section 65-707 (F) (2), G. S., 1935, which in general terms prohibits the sale of or possession with intent to sell condensed skimmed milk to which has been added any fat or oil other than milk fat, either under the name of said product or articles or under any fictitious or trade name whatsoever. The Sage Stores Company is a Kansas corporation engaged in

the retail sale of food products, including the product in question. Carolene Products Company is a non-resident corporation, not licensed to, or doing business, in the State of Kansas, engaged, among other things, in the shipment of the food compound in question to jobbers and wholesalers in the State of Kansas in the original package.

The Issues.

The issues for the Court to determine in this action are:

(1) Is the product, Carolene and Milnot, wholesome, non-injurious and properly labeled.

(2) If the product is wholesome, non-injurious and properly labeled, does the Kansas Filled Milk law prohibit its manufacture and sale.

(3) If the product is wholesome, non-injurious and properly labeled, is the prohibition of its sale by the Kansas Filled Milk law a violation of Section 1 of the Bill of Rights of the Constitution of Kansas and of the 14th Amendment to the Constitution of the United States.

Defendants take the position that under the Stipulation of Undisputed Facts in this case the Court must find that the product is wholesome, non-injurious and properly labeled. Since skimmed milk and cottonseed oil are recognized wholesome food products, and are improved by the addition of vitamins, the resulting compound as a matter of law must necessarily be found wholesome and non-injurious. The label, which is before the Court in the Stipulation of Undisputed Facts, fairly discloses and does not misrepresent the contents of every can of the product.

The plaintiff predicates its right to relief in this action largely on the decision of this Court in the case of *Carolene Products Co. v. J. C. Mohler et al.*, 152 Kan. 2, as referred to in paragraph 10 of its petition. The product under consideration in that case, which was sold under the names of Carolene and Milnut, contained coconut oil, sweet skimmed milk and Vitamins A and D. The decision in that case was based largely upon the finding of the trial court that there was serious disagreement among experts as to whether coconut oil was a pure, healthful and nutritious food. The Court said that was the most vital issue in the case. The Court also found that the product was mislabeled, and that under the label then used it might be mistaken for condensed milk.

The product here involved contains only cottonseed oil, sweet skimmed milk and Vitamins A and D. It contains no coconut oil. It is sold under a new label which has been changed to meet all of the objections made by this Court in the Mohler case.

Stipulation of Undisputed Facts.

Plaintiff and defendants have agreed upon undisputed facts by a stipulation heretofore filed in this cause, in which it is admitted that Honorable J. S. Parker is the Attorney General of Kansas; that The Sage Stores Company is a Kansas corporation engaged in the retail grocery business in that state; that Carolene Products Company is a Michigan corporation organized for and engaged in the distribution of the food product herein described, and known as Milnut and Carolene.

It has been further agreed that the defendant Carolene Products Company has not shipped into the State of Kan-

sas and the defendant The Sage Stores Company has not sold in the State of Kansas any product containing coconut oil or bearing the label criticized by the Supreme Court of Kansas since the final decision and judgment of that court in the case of *Carolene Products Company v. J. C. Mohler et al.*, No. 34307.

That the sole ingredients of Milnot and Carolene are sweet skimmed milk, refined cottonseed oil and certified natural vitamin concentrates; that there is no other ingredient in said product except the foregoing; that the product is manufactured in the modern, sanitary creameries of the Litchfield Creamery Company at Litchfield, Illinois, and at Warsaw, Indiana; that the product is manufactured by mixing (a) sweet skimmed milk, (b) refined cottonseed oil and (c) natural Vitamin A and Vitamin D concentrates, which mixture is evaporated at the Litchfield Creamery Company with sanitary equipment in the same manner as sweet, whole or skimmed milk is evaporated in the manufacture of evaporated milk; that after evaporation, at the end of which the volume of the mixture is reduced to 40 per cent of the original volume solely from loss of water, the product is put up in hermetically sealed cans by modern and sanitary canning machinery; that after the canning, the cans and the product therein are thoroughly sterilized under steam pressure at 240° F. in the same manner as canned evaporated whole milk is sterilized; that defendants' product is rendered thereby absolutely free of all bacteria and so remains thereafter;

That each 14 1/2 ounce can of defendants' product contains 2,000 U. S. P. units of Vitamin A and 400 U. S. P. units of Vitamin D;

That the fat soluble Vitamins A and D introduced in the product are secured from nationally known, reputable laboratories which have extracted these vitamins from prime natural sources such as fish livers and prepared these concentrates of readily available vitamins for use in human food and for medical purposes;

That defendants' product is a compound containing approximately the following chemical constituents:

Fat	Approximately	6.00%
Protein	"	7.75%
Carbohydrates	"	10.75%
Mineral Salts	"	1.65%
Water	"	73.85%

That Milnot and Carolene is a compound, manufactured and compounded from the following natural substances in their natural states: (a) skimmed milk, (b) refined cottonseed oil, and (c) natural concentrates of Vitamins A and D; that in the compounding of these natural products no other substance is added;

That all persons handling and dealing in said product from the manufacturer to the retailer, carefully compound, sell and handle this product in hermetically sealed tins bearing labels, copies of which are attached to the Stipulation of Undisputed Facts.

Evidence Proposed to Be Introduced.

If plaintiff seeks to establish a constitutional rationale for the act or its application to defendants' product either (a) on the ground that the product is deleterious to the public health; (b) on the ground that it is fraudulently sold, or (c) on the ground that it is injurious to the economic interests of the State of Kansas, then the de-

defendants, without abandoning their position that under the Stipulation of Undisputed Facts the sale of this product is legal under the Constitution of the United States and the Constitution and the laws of the State of Kansas, will offer evidence in support of the affirmative pleas of their answers.

To meet the contingency that under the undisputed facts the court might hold that the statute in question prohibits the sale of defendants' product, defendants have affirmatively pleaded (1) that the product is wholesome, (2) that there is no fraud in the sale of the product, (3) that the product was not within the reason or contemplation of the legislature at the time of the passage of the act, (4) that because of under-consumption of the food elements of milk the sale of the product is a public benefit, (5) that by its manufacture and sale a cheaper food containing the elements of milk is given to the public, which is thereby benefited, and (6) that it is an economic benefit to dairymen and farmers by providing a market for skimmed milk and cottonseed oil. These affirmative facts are pleaded in defendants' answers to which reference is hereby made.

The defendants will offer evidence of the method of processing the food compound sold by the defendants, including the production of milk, the delivery of the same to the Litchfield Creamery Company, and the processing, labeling and sale of Milnot and Carolene. Evidence will also be offered as to the kind and type of machinery used in processing, the quantity of the product produced and sold, and the general use of the product by the consuming public.

Evidence will be offered that at the time of the passage of the Kansas Filled Milk law there was not then known such a product as Milnot and Carolene. The law was not intended to cover such a product. The use of vitamins in the fortification of food products was unknown and the law did not contemplate the prohibition of a vitamin sufficient product such as the product in question. While defendants contend that under the Stipulation of Undisputed Facts the court must find that the product in question is a wholesome, non-injurious, properly labeled food product, they will also offer evidence that there is no reasonable difference of opinion concerning the wholesomeness of this food.

Evidence will also be offered to show that cottonseed oil is pure and wholesome and that it is produced under sanitary conditions and refined under sanitary conditions. That it is a recognized wholesome food product.

Evidence will be offered as to the wholesomeness and value of skimmed milk and cottonseed oil as food for human beings. Eminent biochemists will testify as to the wholesomeness of the compound of skimmed milk and cottonseed oil fortified with vitamins. Such testimony will establish the fact that Milnot and Carolene has high nutritive value and that it fills an established place in the diet of this country, preserving and making available necessary and valuable food elements that have heretofore been wasted; that, in addition, the product is fortified with the essential Vitamins A and D so that as a source of such vitamins it is superior to milk. Evidence will also be offered that this food compound is in general use in a large part of the United States, having a well established culinary use as a food, and that it has been accepted with

approval by the consuming public, and that its use has been and is beneficial to the public.

Evidence will be offered as to the public benefit resulting from the sale of this wholesome food compound at a price within the reach of people in the lower income brackets. Skimmed milk contains 60 per cent of the food value of milk, and when compounded with cottonseed oil and fortified with vitamin concentrates affords a wholesome and desirable product accessible to a great portion of the public now denied the essential food elements contained in the product in question.

Evidence will be offered that the product is sold only in hermetically sealed cans clearly labeled to show the contents of the compound, such labels being approved by the Federal Food and Drug Department.

For the purpose of showing the general acceptance and the wholesomeness of this food product evidence will be offered to prove that in the State of Kansas with the full knowledge of the state authorities, medical profession, nutritionists and dieticians, foods of identical composition are being sold at an extremely high price for the feeding of infants, and that these foods of identical composition are generally considered by dieticians, nutritionists, doctors and chemists, to be wholesome, nutritious, and equal to whole milk for adult and infant consumption.

Evidence will also be offered to show that there will be no administrative difficulty in permitting the sale of this food while suppressing the sale of unwholesome and vitamin deficient foods.

The State cannot sustain the act in question upon the ground that it is in protection of its dairy industry. Denial of the right to sell wholesome food products within a

state because such sale tends to injure an industry within the state is a trade barrier of the most vicious type and is in excess of constitutional authority. However, we will show by evidence that by using skimmed milk in the food compound in question the processor is able to pay a higher price for fluid milk than is paid by the milk evaporator. The processing of the product is therefore an economic benefit to the milk producer. Likewise, evidence will be offered on the economic value of the product to the cotton farmers and industry and to the public.

Evidence will also be offered that the principal evaporated milk producers of the United States have a monopoly on the purchase of milk for evaporation. That these manufacturers have formed an unlawful combination to restrain trade and to fix prices to the milk producers and to fix prices at which the evaporated milk is sold, which combination has been effective except in areas where the respondents operate. These combinations have been able to fix prices to both the producer of the fluid milk and to the consumer, to the injury of both. The only protection that the producer of fluid milk has is his ability to sell to the producer of the food in question. The only protection that the consumer has is his ability to purchase this food when the exactions of the milk monopoly become exorbitant.

Defendants further intend to prove that there is a decided under-consumption in the State of Kansas, as well as in other states, of the food factors found in skimmed milk, and that the cost of evaporated milk and whole milk containing these food factors is so high that general consumption of a sufficient quantity of the food factor of skimmed milk is impossible on account of these prohibi-

tive prices, and that on account of the same much skimmed milk is wasted, fed to animals, or discarded, and the public is thereby deprived of the benefits of the supply of this highly nutritious and essential food, and that on account of the extended market that will be created by the manufacture and sale of said products, the farmers and dairymen, will be benefited by receiving a wider market and a better price for their sweet skimmed milk.

The Court, upon motion of the Attorney General, has stricken from the answer the plea of unequal or discriminatory enforcement of law and that this is not, therefore, an issue before the Commissioner.

D.

THE EVIDENCE.

I.

Stipulation of Undisputed Facts.

Come now the plaintiff and the defendants and stipulate as follows:

I.

That Jay S. Parker is the duly elected, qualified and acting attorney general of the State of Kansas and brings the action on behalf of plaintiff for and on behalf of the state.

II.

That the Sage Stores Company is a corporation organized under the laws of Kansas doing business in the State of Kansas with its principal place of business at Topeka, Kansas. That its principal purpose is to engage

in the general mercantile, produce and retail grocery business and that as such, at the time of the filing of said petition in this case, said defendant, Sage Stores Company, was keeping for sale and had in its possession with intent to sell and was selling a product, hereinafter described, manufactured and distributed by the defendant, Carolene Products Company, a Michigan corporation, which sales were not the first sale thereof in the State of Kansas in the original package intact and unbroken.

III.

That the Carolene Products Company is a Michigan corporation organized for the purpose of engaging in the distribution and sale of compounds of evaporated skimmed milk and fats and oils other than milk fat and particularly in the distribution and sale of the compound of evaporated skimmed milk containing oils and fats other than milk fat hereinafter described.

IV.

That said product, herein described, is manufactured for the Carolene Products Company by the Litchfield Creamery Company of Litchfield, Illinois, and Warsaw, Indiana, which Litchfield Creamery Company is an Illinois corporation.

V.

That said product is and has been sold under the trade names of Milnut, Milnot, and Carolene. That labels attached to and made a part of the separate answers of the defendants are true replicas of labels attached to the cans containing said product. That said names of Milnut, Mil-

not and Carolene are trade names and are the property of and a valuable asset to said Carolene Products Company. That the products contained in the cans are identical, whether said can is labelled Milnut, Milnot or Carolene. That the only distinction is in the labels. That the product is packed in hermetically sealed cans of identical capacity and shape, containing fourteen and one-half ounces of the product. That the product consists of skimmed milk, evaporated to the point that it contains not less than twenty per cent milk solids other than fat. That it contains six per cent cottonseed oil and two thousand U. S. P. units of Vitamin A and four hundred U. S. P. units of Vitamin D. That it contains seven and seventy-five hundredths per cent protein, ten and seventy-two hundredths per cent carbohydrates, one and sixty-five hundredths per cent mineral salts.

VI.

That said product is sold in Kansas by the defendant, Carolene Products Company, through brokers who in turn sell it to wholesalers and jobbers, who in turn sell it to retail dealers. That the Sage Stores Company, a corporation, is a retail dealer. That orders for the product are taken by such brokers, sent to the defendant, Carolene Products Company, who ships the product direct to the purchaser, who pays the defendant, Carolene Products Company, direct for such product. The defendant, Carolene Products Company, pays such brokers on a commission basis for the products sold by them for the defendant, Carolene Products Company.

VII.

That the defendant, Carolene Products Company, because of its property right, claims the right to have said product distributed in Kansas and therefore has such an interest in said litigation that it is a proper party.

VIII.

That written opening statements of their case may be made in advance of the taking of testimony by the parties by each preparing a written statement and submitting the same to the commissioner with copies delivered to the adverse parties, the plaintiff to prepare and deliver his statement to the commissioner by August 5, 1941, and the defendants to prepare their statement and deliver it to the commissioner by the 31st day of August, 1941.

II.

Manufacture and Sale of Product.**DEFENDANTS' EVIDENCE.****CHARLES HAUSER.**

(T. 29-108.)

Direct Examination.

Charles Hauser, of Litchfield, Illinois, stated that he was President of the defendant Carolene Products Company and Secretary of the Litchfield Creamery Company, which latter firm maintains plants in Litchfield, Illinois, and Warsaw, Indiana; that it produces and manufactures a general dairy line, including Milnot and Carolene, as well as butter, ice cream and cottage-cheese; that it distributes whole milk in Litchfield, Illinois (T. 29).

That the Carolene Products Company is a sales and distributing company for Milnot and Carolene, buying those products from the Litchfield Creamery Company (T. 30), that Milnot and Carolene are trade names for the same product, Carolene being one of the brands since 1917; that Milnot was started about 1934, and that the product, Carolene and Milnot, a compound of cottonseed oil and skim milk, the product covered by the stipulation and the brands, has been marketed since June, 1940; that prior to that time coconut oil was used instead of cottonseed oil; that most of the cottonseed oil used in the present product is obtained from Wesson Oil, Snowdrift Company and Durkee's Famous Foods; that it is a hydrogenated refined cottonseed oil (T. 31), a bland oil, odorless, tasteless and colorless.

That the product is at the present time sold in eighteen states; that the milk used in the product is purchased from dairy farms in the vicinity of Litchfield, Illinois, and Warsaw, Indiana (T. 32); that a small quantity of skim milk is purchased from a few producers; that when the milk is received by the plant it is inspected as to quality, is separated and the cream is taken off and sold in the form of cream or butter; that the skim milk is mixed with cottonseed oil and high potency concentrates of A and D in fish liver oil, is evaporated to somewhat more than one-half, and is homogenized by being run through a high pressure pump at about 2,500 pound pressure to the square inch to break up the fat and milk solids so that it stays in an inseparable emulsion; that it is then sealed in hermetically sealed cans and sterilized by heating to approximately 240 degrees to make it completely sterile (T. 33); that it is sterilized after being sealed in the cans

and then is labeled by machinery and packed into cases containing 48 cans of 14 1/2 ounces each of 96 cans of 6 ounces each; that it is then sold to the Carolene Products Company which is the only company which sells it; that the butter made from the cream is sold on the market by the Litchfield Creamery Company (T. 34); that the Litchfield Creamery Company also manufactures Sunshine Brand Evaporated Milk, evaporated milk being about 1% of the production of the creamery.

That about 3,300 farmers sell milk to the Litchfield Plant and about 1,500 farmers sell whole milk to the Warsaw, Indiana, plant (T. 35); that they purchase skim milk principally from the St. Louis Dairy Company, a branch of the national dairies; that about 97% of their purchase is in the form of whole milk and it is purchased in a radius of 35 to 50 miles from Litchfield; that about 20,000 cows produce the milk brought to the Litchfield plant and about one-half that many from the Warsaw, Indiana, plant (T. 37); that since 1915 when the witness became connected with the Litchfield Creamery Company there has been a tremendous increase in the milk produced in the Litchfield territory (T. 38).

That the Carolene Products Company owns the formula and patent rights for the processing of Milnot and Carolene (T. 47), and the Litchfield Creamery Company uses them for the processing of the product; that the Litchfield Creamery Company has about 260 employees.

That the Carolene Products Company sells to the jobbers or wholesale grocers through brokers, not selling directly to consumers or retailers; that the broker takes the order from the jobber and sends it to the company to be filled (T. 48); that in Kansas those brokers handle other

lines also; that when the order comes to the Company, if it is approved, the product is charged to the jobber or wholesaler and is then shipped (T. 49) in the unbroken package to the dealer in Kansas; that it is usually shipped by truck, some by rail (T. 50); that the wholesaler usually distributes to the retailer in the original package and the latter then sells the product by the can.

That in 1940 something over 1,100,000 cases were produced by the Litchfield Creamery Company and that there has been an increase in production this year; that the label which has been stipulated as the label in use is the one which goes on all the cottonseed products shipped into Kansas and other places (T. 51).

Cross Examination.

The witness testified on cross-examination that a patent is pending on the present manufacturing process, the new product containing a greater solid content (T. 76).

RAYMOND E. RICKBEIL.

(T. 108-118.)

Direct Examination.

Raymond E. Rickbeil, of Springfield, Illinois, testified that he was a certified public accountant and did the accountancy work for the Litchfield Creamery Company and the Carolene Products Company; that he had prepared from the books of the company a statement of the cost of milk purchased from farmers in the years 1938, 1939, 1940 and up to June 30, 1941, together with the cost of the skim milk which was purchased; that he had also prepared a statement for the same period, by months, of the milk delivered to the Litchfield Creamery Company at the Litchfield plant and at the Warsaw plant (T. 108), to-

gether with a statement for the same period of the prices paid per 100 pounds compared with the formula prices of the Evaporated Milk Association (T. 109).

The witness testified that the information contained in Exhibit 5 was from the company records and from information furnished by the organization of the evaporated milk industry under the Agricultural Adjustment Administration as published and sent out by the Evaporated Milk Association; that they bear the heading "Evaporated Milk Industry" (T. 111); that the prices are the minimum which the companies can charge under the Agricultural Adjustment Act (T. 112).

Defendant's Exhibit 5 (T. 112) shows that the purchases of milk by the two Litchfield Creamery Company plants were from \$1,266,854.64 to \$2,125,561.71 per year in the period from 1938 through 1940, more than one and one-half million dollars worth purchased in the first six months of 1941.

Defendants' Exhibits 5-1 and 5-2, entitled "Pounds of Milk Received" show that in the same period from 89,884,885 pounds to 136,889,434 pounds of milk were received per year by the two plants of the Litchfield Creamery Company.

Defendants' Exhibits 5-3, 5-4, 5-5 and 5-6 entitled "Prices Paid per 100 Pounds of 3.5% Milk" showed that in 1938 the price paid for milk by the Litchfield Creamery Company was from 4.71% to 8.58% greater than the average price paid by the Evaporated Milk Association members; that in 1939 the price paid was from 7.77% to 12.72% greater, in 1940 it was from 8.22% to 9.28% greater, and in the first six months of 1941 it was from 6.09% to 6.66% greater.

A. K. SAUNDERS.

(T. 118-122.)

Direct Examination.

A. K. Saunders testified that he lived in Litchfield, Illinois, and was an employee of the Litchfield Creamery Company; that he was formerly with the Diversey Corporation doing educational work (T. 118) for the milk producers; that that work had to do with the education of farmers in the proper sanitation methods in the production of milk; that he is fieldman with the Litchfield Creamery Company and his duties are to do educational work along sanitary lines and see that the milk is up to quality (T. 119); that the milk is brought to the plant by between eighty and ninety trucks operating in an 85-mile radius from Litchfield, Illinois; that there are approximately 3,400 producers in the Litchfield territory with 25,000 or 30,000 cows in production.

That when he goes into the field to inspect the dairy farms he uses a regular printed form (T. 120):

Defendants' Exhibit 6 (T. 121), being the form identified by the witness, "Suggested Helps for Caring for Milk," was introduced in evidence.

CLYDE DUPREE.

(T. 122-124.)

Direct Examination.

Clyde Dupree testified that he lived in Litchfield, Illinois, and at the present was engaged in hauling milk to the creamery from the producers; that he owned his own truck and hauled within a radius of 50 miles, picking the milk up at the farms in cans (T. 122), then trucking

it and delivering it to the Litchfield plant; that he serves about 80 farms, and all of the truckers operate on the same plan and have a route; that the producer pays for the hauling and the charge is based upon the distance from the town. (T. 123).

HOWARD THOMPSON.

(T. 124-128.)

Direct Examination.

Howard Thompson testified that he was manager of the Litchfield Creamery branch at Warsaw, that being the Winona, Indiana, plant, and that he had been manager for three years (T. 124).

Defendants' Exhibits 7 and 8, photographs of the Winona Lake plant, and defendants' Exhibits 9 and 10, photographs of the interior of that plant, were introduced in evidence (T. 125).

The witness testified that in the last two years improvements had been made on the plant, the receiving room being enlarged and modernized, with new equipment being added; that the new equipment installed was the latest type of equipment on the market; that prior to going to Warsaw he worked for the Morning Milk Company at Wellsville, Utah, a company engaged in the production of evaporated milk; that the process of evaporation used in producing Milnot and Carolene is similar to the process used in ordinary evaporated milk plants (T. 126).

Cross Examination.

On cross examination the witness testified that they produced both the cottonseed oil and cocoanut oil products in the Warsaw plant; that the oil was added in the hot

wells, tanks where the milk is held immediately before being evaporated; that the vitamins are added in the evaporating pan and the product is sterilized after being canned, just as in other evaporating processes.

Re-Direct Examination.

On re-direct examination the witness testified that the manufacture of the coconut oil product had ceased about a month previously (T. 127).

E. F. TULLAR.

(T. 128-130.)

Direct Examination.

E. F. Tullar testified that he was District Manager for the Milk Department of the Food Machinery Corporation, a company which manufactured continuous sterilizers used in evaporated milk plants; that he had been engaged in the milk machinery business since 1924 and was acquainted with the machinery and equipment used in evaporating plants (T. 128); that he was acquainted with the equipment of the Litchfield Creamery Company both at Litchfield, Illinois, and Warsaw, Indiana, and that in February, 1940, a number of new stainless steel tanks, pans, evaporators, hot wells, stainless steel pipes and fittings and a homogenizer were installed under his direction; that the new installation is modern and up to date (T. 129).

RAYMOND ZUCK.

(T. 130-134.)

Direct Examination.

Raymond Zuck testified that he was employed by the Litchfield Creamery Company, Litchfield, Illinois;

that he was a graduate of the University of Illinois, having specialized in the manufacture of dairy products; that he had formerly been employed by the Carnation Company and by Metzger Company; that he was first a student employee and then general plant foreman for the Carnation Company at Maitowoc, Wisconsin, where they manufactured evaporated canned milk (T. 131); that he was in that work six and one-half years.

That his duties with the Litchfield plant have been general throughout the plant, considerably on quality work; that the same equipment is used in the making of Milnot and Carolene as in the manufacture of evaporated milk (T. 132); that on the average the Litchfield plant is better equipped and the equipment is more modern than that in most evaporated milk plants and that it is better than average size.

Cross Examination:

On cross-examination the witness testified that he had visited twelve or more evaporated milk plants and had worked in three (T. 133).

HIRAM DAVID GOOCH.

(T. 134-138.)

Direct Examination.

Hiram David Gooch testified that he had been employed by the Litchfield Creamery Company for a little over two years; that he was a graduate of the University of Illinois and had a Master's degree in Organic Chemistry at Iowa State College (T. 134); that his work with the Litchfield Creamery Company was with the control of Milnot in its compounding and manufacture and he had

general supervision of the different processes at the plant; that the differences in the processing of Milnot and Carolene and of Sunshine Evaporated milk are slight except that the milk must be separated and the cream diverted to another source in the case of the former (T. 135) and the vegetable fat must be added; that the skim milk used in the processing of the product was pure sweet skim milk and that all sanitary precautions were taken to keep it pure (T. 136). —

Cross Examination.

The witness testified on cross-examination that all of the cream taken off the milk went into the making of butter unless they got orders to ship it for manufacturing purposes.

Re-Direct Examination.

On re-direct examination the witness testified that every precaution was taken to produce a clean wholesome product in Carolene and Milnot, every sanitary requirement was observed, and the milk was tested when it came in and was under continuous observation to determine its purity, sweetness and wholesomeness from the time it got to the platform until it went into the evaporators (T. 137).

OTTO BIERBAUM.

(T. 138-142.)

Direct Examination.

Otto Bierbaum testified that he was superintendent of the Litchfield and Warsaw plants of the Litchfield Creamery Company, his duties being to take care of the milk from the time it came to the receiving room until it

was ready to be shipped (T. 133); that they had about 140 employees in the Litchfield plant and about 50 at the Warsaw plant in addition to the truckers; that he had been with the Litchfield Creamery Company twenty years; that in the last eighteen months a good portion of the Litchfield plant had been rebuilt and new equipment added (T. 139), everything being stainless steel, including the most up-to-date continuous sterilizer; that the same standard was maintained in the Warsaw plant.

That only sweet, pure, skim milk was used (T. 140), and to further insure its purity it was heated to the boiling point and held for fifteen minutes, then it entered the evaporator and was evaporated to less than one half its original volume, after which it was cooled, standardized, canned and then sterilized at 242° for fifteen or sixteen minutes; that everything known was done to insure the purity of the product.

Cross Examination.

On cross-examination the witness testified that the product was evaporated to slightly less than one-half; that milk had about 9% solids before being evaporated and that the product after evaporation had about 20% milk solids (T. 141); that 220 pounds of milk would be reduced to 100 pounds.

MELVIN HAUSER.

(T. 142-150.)

Direct Examination.

Melvin Hauser testified that he lived in Litchfield, Illinois, was the son of Charles Hauser, and was treasurer and assistant-secretary of the Litchfield Creamery Company; that the company manufactured a general line of

dairy products including butter, ice-cream, cottage cheese, condensed skim milk, fluid milk, bottled milk (T. 142) and Carolene and Milnot; that the company first began to manufacture the product under consideration in fair quantities in June of 1940; that prior to that time it had experimented with cottonseed oil but not until then was a satisfactory formula worked out; that the first cottonseed oil product was shipped into the State of Kansas, and that was in the middle of the year 1940 (T. 143); that prior to the Mohler case they had experimented with the use of cottonseed oil and had consulted with the National Cotton Council of America; that they had made tests with other vegetable oils but so far none had proven as satisfactory as cottonseed oil; that the plant was inspected by the Illinois Food and Drug Division and the State Department of Food and Dairies (T. 144).

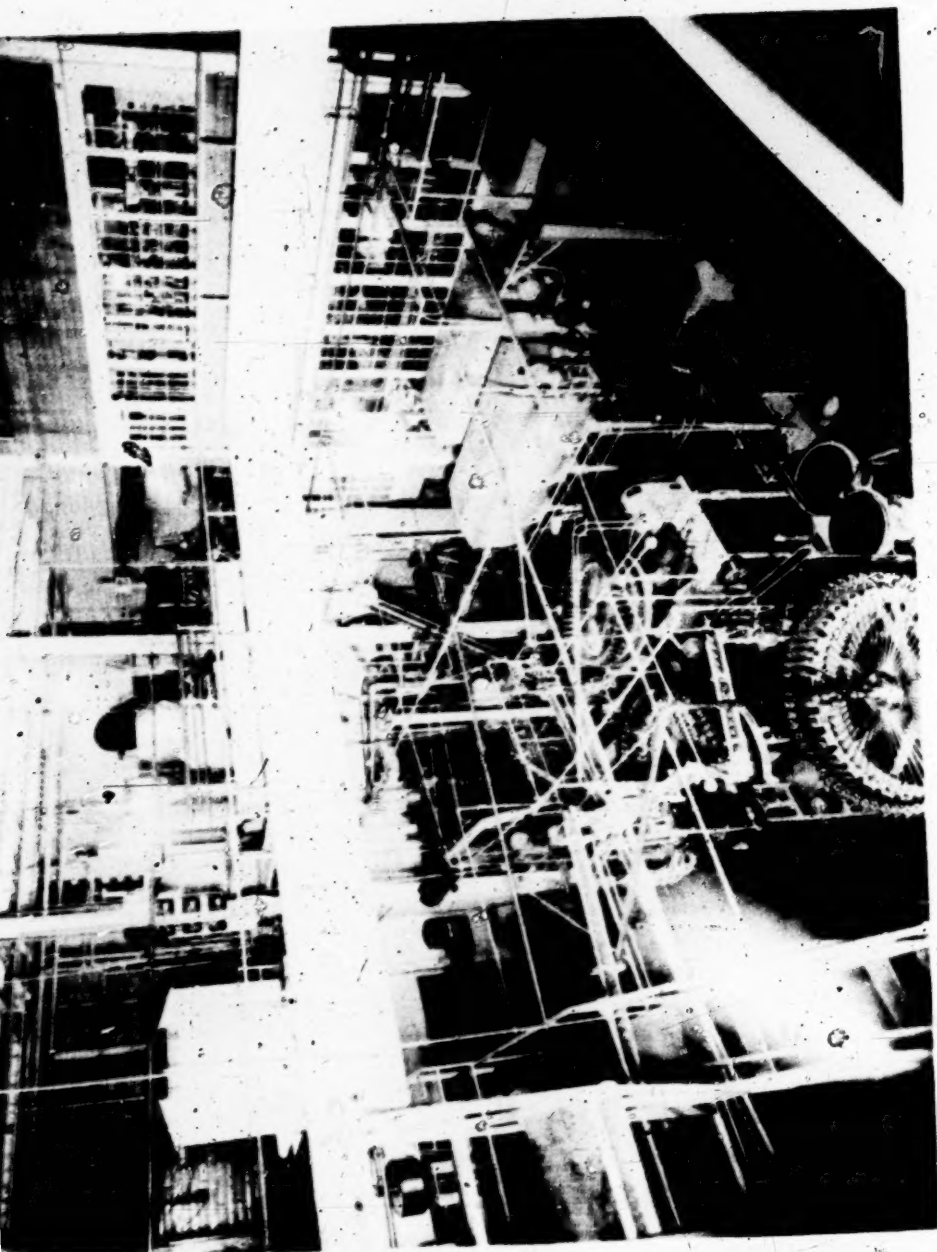
Cross Examination.

On cross examination the witness testified that they had experimented with soybean oil, corn oil and peanut oil but were not satisfied with them from the standpoint of flavor; that they made 2,000 or 3,000 cases of evaporated milk each year using the same machinery (T. 145); that they made only enough evaporated milk to supply the demand (T. 146).

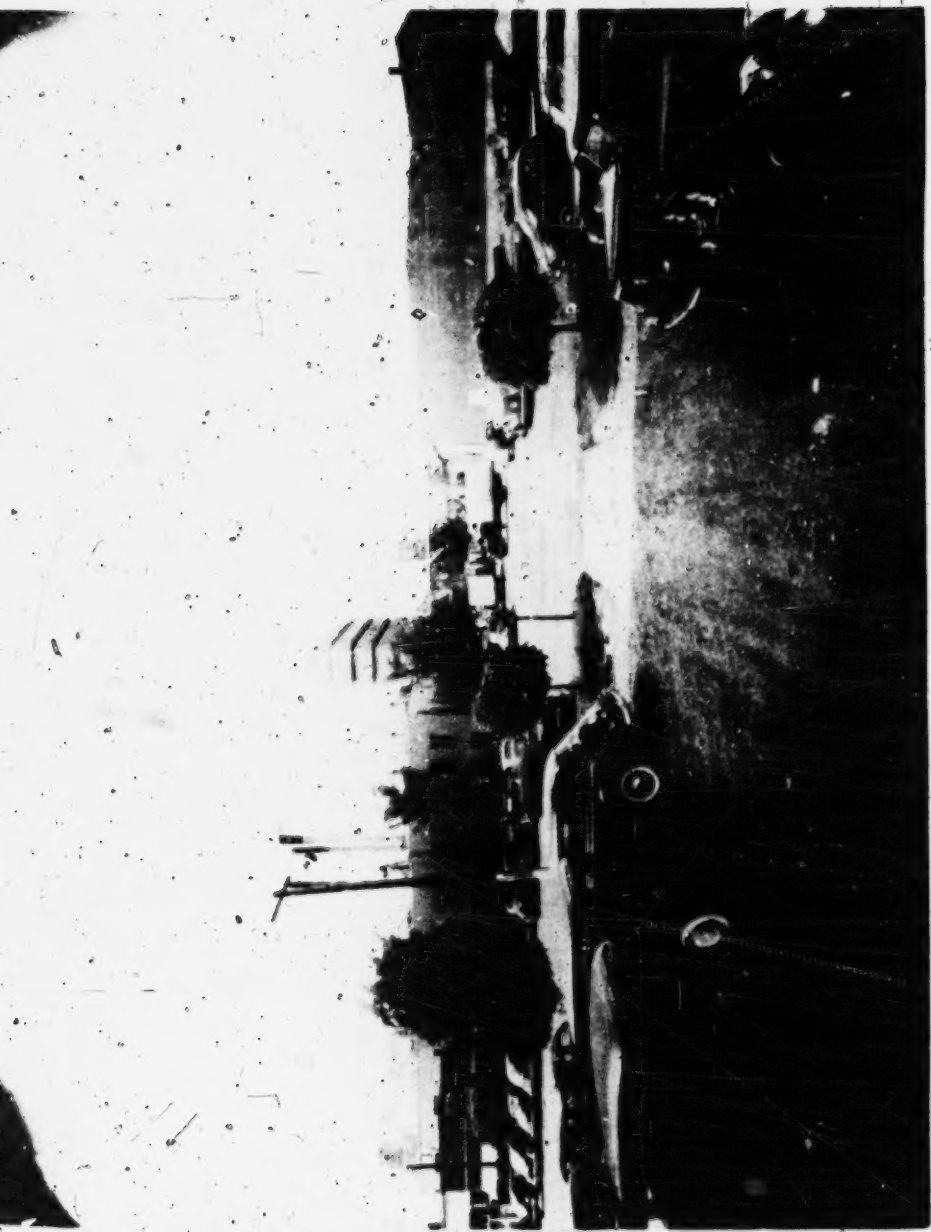
Re-Direct Examination.

Defendants' Exhibit 16 (T. 148), an interior view of the plant showing the canning room and storage tanks, was introduced in evidence.

Defendants' Exhibit 17 (T. 148), another view of the canning room showing the cooling and homogenizing equipment and the laboratory, was introduced in evidence. It is reproduced on the opposite page.



Defendants' Exhibit 18, an exterior view of the plant, was offered in evidence and is reproduced on the opposite page, and Defendants' Exhibit 19, another exterior view of the plant, was offered in evidence (T. 148).



The witness testified that Carolene and Milnot were being sold in Missouri, Nebraska, Kansas, Arkansas, Oklahoma, Texas, Louisiana, Mississippi, Alabama, Florida, North Carolina, South Carolina, West Virginia, Michigan, Kentucky, Tennessee, Indiana and Illinois (T. 149).

R. L. BLANKE.

(T. 184-187.)

Direct Examination.

R. L. Blanke testified that he was in the dairy, machinery and creamery supply business, being president of the Meyer A. Blanke Company; that that company handled equipment similar to that of the Litchfield Creamery Company, having sold quite a bit of it; that his first experience in the dairy and machinery business was in 1904 and that he had kept up with the development of that business; that for the past ten years the Litchfield Plant had been remodeled very extensively (T. 185), old and obsolete equipment being replaced with new equipment, that the plant was always kept in first class efficient operating condition, being probably more up to date than any other plant he was familiar with; that the same equipment was used in the evaporation of milk as in the processing of Milnot and Carolene; that the equipment in use at Litchfield and at Warsaw, Indiana, was the very latest equipment he knew of (T. 186); that his company was the largest distributor of dairy machinery in the United States (T. 187).

HARRY W. JOHNSON.

(T. 619-632.)

Direct Examination.

Harry W. Johnson testified that he lived in Wichita, Kansas, and was a food broker doing business under the name "Johnson Brokerage Company"; that he was the broker representative of the defendant Carolene Products Company in the Wichita territory, having been such since they entered the market; that he solicited orders for Milnot in his territory from wholesale grocers.

That if he took an order he wired or mailed it to the Carolene Products Company at Litchfield, Illinois, for final confirmation (T. 619); that if confirmed the order was shipped from Litchfield, Illinois, by rail or truck, the Carolene Products Company doing the billing for the product and collecting for it; that as a broker he received a commission on whatever sales were consummated; that he had nothing to do with the delivery of the merchandise and that none of it was delivered to his customers from any point within the State of Kansas; that none was stored within the State for delivery; that it was delivered to the wholesaler in the original package (T. 620); that those packages were delivered without being divided up.

That he had been selling Milnot in that territory for something like two years; that it had received general acceptance by the trade and that there had been a continued increase in the demand, 1941 sales exceeding those in 1940; that there had been no complaints either by wholesalers or retailers as to the effect of the use of the product by the consuming public; that the advertising was not done by the defendant Carolene Products Company.

but there had been some advertising by wholesalers and retailers, both by newspaper and radio (T. 621); that he had used the product himself and found it to be wholesome and nutritious, both he and his wife liking it better than evaporated milk because it tasted more like whole milk.

Cross Examination.

On cross-examination the witness testified that the product was selling at \$3.20 delivered to the wholesalers; that it was up to the wholesaler as to the price at which he re-sold it to the retail trade; that the jobber sold it at from ten to twenty-five cents a case above their cost.

That he distributed to the retailers a recipe book furnished by the company, the book being Defendants' Exhibit 11 (T. 622); that they also furnished a cut-on request, the same being Defendants' Exhibit 12 and distributed a placard similar to Defendants' Exhibit 15.

That where retailers were disturbed by local prosecutions he submitted the reports to the Carolene Company and any arrangements that were made with the retailer came through the company; that in the past few months State men had told the retailers they were violating the laws and would be arrested (T. 623); that he had seen copies of letters written by the Carolene Products Company as to the advisability of continuing the sale of the product (T. 624).

Plaintiff's Exhibit G, a letter from the Carolene Products Company to the Drive-in Market, Halstead, Kansas; referring to the legality of the sale of the product in Kansas and offering to protect the retailer, was offered in evidence (T. 625). The witness testified that other letters were similar to Plaintiff's Exhibit G; that he had not been

instructed to give any similar information to retailers (T. 626).

III.

Relation of Manufacture and Sale of Product to Public Health.

A.

Product As a Food for Humans.

1. Skim Milk As a Food for Humans.

The Commission found as a fact, "Skim milk is a wholesome, nutritious, and harmless food, and there is no history of injury resulting from its use as a food for human consumption" (Finding of Fact No. 13, A. 497).

This finding is supported by the testimony of at least nineteen witnesses, some of whom were called by the plaintiff. There is no evidence in the record to the contrary.

2. Cottonseed Oil As Food for Humans.

The Commissioner found as a fact, "Cottonseed oil is a wholesome, nutritious, and harmless food, and there is no history of injury resulting from the use of cottonseed oil as a food for human consumption" (Finding of Fact No. 12, A. 496).

The Commissioner further found in the same Finding, "Hydrogenated cottonseed oil is used extensively for edible purposes, such as in shortening, oleomargarine and salad oils and dressings."

These findings are fully supported by the evidence of numerous witnesses, called by both parties. There is no evidence in the record to the contrary.

3. *The Fortification of Foods by the Addition of Vitamins A and D.*

The Commissioner found as a fact, "Vitamins A and D obtained from fish livers * * * are called natural vitamins and are what are used in the fortification of defendant's product. Natural vitamins are equal in nutrition to vitamins supplied through butter fat or other sources, and the fortification of foods with natural vitamins, including Vitamins A and D, is recognized by nutritionists as a proper practice. * * * There is no history of injury resulting from the fortification of food with natural vitamins" (Finding of Fact No. 16, A. 499).

This finding is fully supported by the evidence. There is no evidence to the contrary.

4. *Combination of Skim Milk, Cottonseed Oil, and Vitamins A and D in Fish Liver Oils As a Food for Humans.*

The Commissioner found as a fact that each of the ingredients of the product in question—skim milk, cottonseed oil and vitamins A and D in fish liver oils—was a wholesome, nutritious and harmless food (Findings of Fact Nos. 8, A. 496; 13, A. 497; 12, A. 496; and 16, A. 499).

The following witnesses testified that a combination of skim milk, cottonseed oil, and vitamins A and D in fish liver oils constitutes a wholesome, nutritious, and harmless food for human consumption:

DEFENDANTS' EVIDENCE.

Grace Vyall Gray, director of Better Home Making Institute (T. 326-328, 331, 341, 343-344).

Norman Bruce, chemist and refinery sales manager, Durkee Famous Foods Company (T. 358).

Dr. Howard J. Cannon, biologist and director of consulting laboratories known as the Laboratory of Vitamin Technology (T. 380, 383).

Benjamin R. Harris, chemist, member of Epstein, Reynolds, and Harris, consulting chemists and engineers, and vice-president of a chemical manufacturing concern known as Emulsol Corporation (T. 399).

Dr. Anton J. Carlson, physiologist with University of Chicago (T. 424, 435, 437-438, 453).

Dr. John Aull, specialist in pediatrics and children's diseases (T. 461, 463-464).

Gladys Buchholz, saleslady and former demonstration agent (T. 483).

Mrs. Ester Rieger, food demonstration worker (T. 491).

Maurice Epstein, grocer (T. 496).

Vernon Briscoe, manager for Milgram Food Stores, Kansas City, Missouri (T. 500).

Vera Junkin, kitchen supervisor, Myron Green Cafeteria (T. 510, 512).

James C. Harline, president and general manager of the Associated Grocers of Kansas City, Missouri (T. 520-521).

Dr. Damon O. Walthall, physician specializing in diseases of children and infants (T. 531).

Dr. Vincent L. Scott, physician specializing in diseases of children and infants (T. 576, 589).

Claude V. Mercer, resident manager of the Wichita branch of Raney-Davis Mercantile Company and Wholesale Grocery (T. 637, 638).

Dr. Lucius E. Eckles, pediatrician (T. 649).

Dr. A. J. Brier, physician specializing in internal medicine and surgery (T. 672).

Dr. Oscar Franklin Bradford, pediatrician (T. 710, 712).

H. W. Potts, wholesale grocer, Lux-Witwer Company, Topeka, Kansas (T. 739).

Dr. O. O. Stoland, professor of physiology, University of Kansas (T. 759-760).

Dr. Paul E. Belknap, physician specializing in pediatrics and diseases of infants and children (T. 773, 777).

V. C. Messersmith, grocer (T. 799).

Joe Sage, grocer and one of the defendants in the case (T. 800).

Charles Oakley, grocer (T. 811).

Ivan Dibble, grocer (T. 819).

Mrs. B. Kross, grocer (T. 827-828).

Frank J. Warren, grocer (T. 832).

Clyde McCombs, grocer (T. 833, 834).

Peter August Herman, grocer (T. 838).

James Cline, grocer (T. 840).

Arthur Towsley, grocer (T. 844).

Ruth Wince (T. 682-689). *Mrs. Ruth Wince*, a housewife living in Topeka, Kansas, who had used *Carolene* and *Milnot* in her home for three or four years, testified that her oldest daughter had a sick spell about two years previously and the doctors gave her up; that she could not eat anything; that they finally tried *Carolene* and she could

drink it (T. 684), and for two or three weeks she ate nothing else, except some orange juice, and she then improved, thrived and is now perfectly well (T. 685).

PLAINTIFF'S EVIDENCE.

There is no evidence in the case tending to prove that a combination of skim milk, cottonseed oil and vitamins A and D in fish liver oils is not a wholesome, nutritious and harmless food for human consumption.

DEFENDANTS' REBUTTAL EVIDENCE.

Dr. Robert S. Harris, associate professor of chemistry and biochemistry, Massachusetts Institute of Technology, testified that defendants' product was a wholesome, nutritious product for the feeding of humans (T. 1667).

Dr. Anton J. Carlson, physiologist of the University of Chicago, testified that the product was a wholesome and nutritious product for the feeding of human adults, children and infants (T. 1765).

B.

Combination of Evaporated Skim Milk and Vegetable Oils Fortified with Vitamins A and D As a Food for Infants.

DEFENDANTS' EVIDENCE.

DR. C. H. SIHLER.

(T. 150-163.)

Direct Examination.

Dr. C. H. Sihler testified that he was a practicing physician and surgeon living in Litchfield and practicing in that city and a territory of approximately a 40 miles radius (T. 150). That he graduated from McGill University at Montreal in 1920 and after an internship in Mon-

treal General Hospital and in St. Louis City Hospital in St. Louis, he had been practicing in Litchfield; that he was in no way connected with Carolene Products Company or the Litchfield Creamery Company (T. 159).

As a practicing physician it was necessary for him to study and give attention to questions of nutrition and nutritional practices (T. 150); that he was acquainted with infant foods used by the profession, among others—Youth, Pet Milk, S. M. A., and Olac (T. 151); that he had also used in addition to these Milnut (T. 152). That he in his practice had observed the use of foods and studied literature to acquaint himself with the use of foods generally and particularly with reference to the use of skim milk; that among others he was familiar with an article by J. S. Abbott published in the American Journal of Public Health, entitled "The Food Value and Economics of Skim Milk." That he had studied Document 82, entitled "Report of American Farm Bureau Federation Concerning the Interchangeability of Oils and Fats" and Technical Bulletin 725 entitled "Nutritive Properties of Certain Animal and Vegetable Fats" and Technical Bulletin 505 entitled "Digestibility of Some Vegetable Fats."

That from his study and practice he was of the opinion that refined cottonseed oil is a wholesome, nutritious food product; that he had used it to some extent in feeding babies and found no ill effects and from his study he thought the fat is just as assimilable, and as far as growth producing results are concerned it is equally up to any of the other fats that are used, either animal or vegetable fats (T. 154).

Cross Examination.

On cross examination the witness testified that he was not an expert on nutrition and that he had never per-

formed experiments to determine the value of oils (T. 159). That S. M. A. is a powdered milk given to children, prescribed especially as a diet for the first eight or nine months of life (T. 160); that it is not fed to all babies but when it is necessary to substitute something other than mother's milk; that it is a preparation to take the place, as nearly as possible, of mother's milk and that it contains cottonseed oil together with other oils, he understood. That he understood that Olac contained powdered skim milk and olive oil (T. 160) and is used as a substitute baby's food the same as S. M. A.; that his studies of vegetable oil were from literature and not from professional study (T. 161).

DR. ANTON J. CARLSON.

(T. 412-435.)

Direct Examination.

Dr. Anton J. Carlson testified that he lived in Chicago, and had an office at the University of Chicago; that he took his Bachelor's Degree at Augustina College in Rock Island, in 1898, and his Master's Degree there, in 1899; that he then entered Stanford University, California, and received a Ph. D. Degree in Physiology in 1902 or 1903; that since then he has received various honorary degrees, M. D. University of Nance, Doctor of Science, Lawrence College, and Doctor of Laws from University of Colorado.

That in the way of education and experience he had attended the international congresses in his specialties, physiology, biochemistry, experimental pathology experimental medicine (T. 412). That he attended those congresses beginning in 1909 in Vienna, in Groningen, in Edinburgh, in Stockholm, in Boston, and in Leningrad.

and Moscow; that in 1909 he spent considerable time in the teaching and research laboratories in Austria, Germany, Belgium, Holland, France and Great Britain, and particularly in England.

That after his graduation from Stanford he spent one year as research associate of the Carnegie Institute at Washington; in 1904 he spent three months at the Marine Biological Research Laboratory in Woods Hole, Massachusetts, and spent the following summer there in research; that for a short time in 1904 he was on the faculty of the University of Pennsylvania Medical School as instructor in physiology. In the autumn of 1904 he was called to the University of Chicago in a minor position in physiology, and remained there until his retirement a little over a year ago; that for the last twenty-five years he had been in charge of the Department of Physiology, and the last ten years he was given one of the ten distinguished service professorships in the University. That he volunteered in the World War in the Sanitary Corps and served with the American Expeditionary Forces in Europe for nearly a year and a half, in Foods and Nutritions; that he was ordered to the American Relief Administration under Herbert Hoover, with headquarters in Paris; that after the first two months of food survey under Hoover in Yugoslavia he was requested to organize and put into force a program for feeding the undernourished children on nearly all of the war devastated areas in Europe except Germany (T. 413). That from February, 1919, to August, 1919, he endeavored to put that program across to the undernourished children in the field in Yugoslavia, Austria, Czechoslovakia, Poland, Lithuania, Latvia, Estonia, and Finland.

That he had been and still was a member and had taken some part in a great many medical, scientific and educational organizations in the United States; that he had served ten years as a member of the Council of Pharmacy and Chemistry of the American Medical Association, was secretary and chairman of the Section of Physiology and Pathology of that Association, was for a long time secretary and president of the American Physiological Society, and served in the same capacity for the Federation of American Biological Societies; that this federation combined physiology, biochemistry, experimental pathology, pharmacology and the Institute of Nutrition; that he was a member of the Institute of Nutrition from its organization. That he had lectured before and was a member of the Harvard Society in New York, the Institute of Medicine in Chicago, being president of it, and the Society of Internal Medicine, Chicago, had been president of it, and president of the American Biological Society; was co-editor of Biological Abstracts, and was for a long time on the board of editors of the American Journal of Physiology (T. 414).

That he was editor-in-chief of Physiological Reviews; had since 1917 been a member of the National Academy of Sciences, which numbers about 250 scientists of the United States, and is an advisor to the Government if and when the Government asks for advice; that he had been the chairman of a Government Advisory Committee of the National Academy to the Department of Agriculture; that he had been a member of the National Research Council which is also an advisory body to the Government, and had been for many years aiding the Food and Drugs Administration of the National Govern-

ment; that for the last two or three years he had been official consultant of the Food and Drugs Administration; that for several years he had been a member of the Public Advisory Committee of the United States Public Health Service and at present was chairman of the subcommittee of that board, and was a member of the Nutrition Committee of the State of Illinois.

That he was a member of the Executive Committee of the National Foundation for Infantile Paralysis, and was also a member of several scientific and medical societies abroad, among them being the Swedish Medical Society, Biological Society of France, Biological Society of China and of Argentina (Tr. 416).

That he had published several scientific works over the last forty years, touching almost every phase of human anatomy, including nutrition and digestion; that he had served as a member of the Council of Foods of the American Medical Association (T. 416).

That he had published numerous articles in the American Journal of Public Health, the American Journal of Physiology and Biochemistry, the Journal of the A. M. A., and a few in French and German publications; and that he had also published the article entitled "Facts and Fancies About Food Fats" (T. 417).

That he had helped to train from five to six thousand physicians, in addition to a great many graduate students, including Dr. Stoland, Professor of Physiology in the Medical School of the University of Kansas, and Dr. Russell Wilder of Mayo's Clinic; that in the course of his work he had acquainted himself by study and by experience with the factors entering into determining the nu-

trition of foods (T. 418). That he had examined the product Milnot, and was familiar with it (T. 422).

“Q. This product you stated was wholesome and useful as a food for humans. Have you examined it for the purpose of determining the comparison of its taste and color and smell with evaporated whole milk? A. Yes, I have. I can taste a difference between this and the evaporated whole milk or some brands of evaporated whole (T. 436) milk, but from the point of view of the looks of it and smell of it and taste of it, as I said before, your preference in taste is largely a question of what you have been used to.

Q. Suppose that an uneducated person should obtain this product and not read the label and feed it to children on the idea that she was feeding evaporated whole milk. Would that have any injurious effect on the health of the child? A. Not at all.

Q. Suppose she fed it to an infant baby instead of evaporated whole milk? A. Well, how old is the infant?

Q. Well, I don't know. Just take any infant. A. Under one year of age?

Q. Yes. In other words, if she takes this— A. (Interrupting) It wouldn't have any other effect than the same quantity of evaporated whole milk.

Q. That is what I am getting at. Now, there has been a contention made here that in spite of the label on this product, that because in the mind of some it might look like and smell like and taste like evaporated whole milk, that if an infant obtained it through the ignorance of the mother and used it that it would cause injury to it because she was using it instead of evaporated milk? A. That is the contention, you say?

Q. That is the contention that is made here. A. You want me to comment on it?

Q. Yes, sir, I want you to comment on it.

Mr. Morris: I object to the statement. I don't think there have been any contentions made like that.

Q. (By Mr. Clark) Well, if that contention is made, I want you to comment on it (T. 437). A. Well, so far as wholesomeness of this, whether they take it for evaporated whole milk or whether they consider it as a cocktail or what, the wholesomeness is not affected by any notion in that direction for adults and children. Now, that word 'infant' is not very well defined. That may be anywhere from the first day of birth up to one year of age.

Q. Well, put it this way: Suppose they got ahold of it and fed it thinking they were feeding it in the place of evaporated milk to a very young child, very young infant, would it have any different effect? A. It wouldn't have any different effect by and large, but there may be temporary idiosyncrasies in the newborn. Ordinarily they are born with a pretty good secretory mechanism, gastric juice. Their pancreas is as ready to function and they get all their enzymes in pancreatic juices, but sometimes they don't, and the feeding of an infant may be a very serious problem for the pediatrician. Some of them can't stand mother's milk even.

Q. Some of them can't use evaporated cow's milk?

A. Quite so, but those are the exceptions. The ordinary average can go for that. My contention is that, as an infant food, this wouldn't create any problem different from evaporated whole milk, but you can't shoot evaporated whole milk into infants one week old and get 100% success in all the infants. They are special problems.

Q. Well, I will put the question more broadly to you: What I am getting at is that in the interest of public health, the matter of public policy to prohibit the sale of this product because some mothers who can't read the label might feed it to an infant, would (T. 438) it be any more injurious to the public health to sell this product and would it have any different effect by and large than evaporated whole milk? A. I can't see that it would. Ignorance cannot be corrected by legislation. That has to be education. No, I can't see that it would. There are pediatricians—this problem of infant feeding—I don't mean a child past one year, because then he can begin to eat like you and I at the table by and large, but this problem of infant feeding is a terrific problem for pediatricians, and some of them have good success with one type of modification, others with another type of modification.

Q. What do you mean by 'modification'? A. Modification of the natural foods, modification of milk, substitution of the vegetable fats or the milk fats, etc., or reducing the fat.

Q. There are many pediatricians who use milk in which the milk fat has been substituted by various forms of vegetable fat? A. Yes, there are a number of them who get good results with that. I presume the variation there is due partly to the variations in the defect in the child who cannot stand the ordinary thing.

Q. And it is true, isn't it, that pediatricians—I believe you stated that—frequently find that the child can't take mother's milk and can be brought out of its troubles, taken care of— A. (Interrupting) I wouldn't say 'frequently.' I say 'occasionally.'

Q. Well, 'occasionally,' I should say. In other words, they have those idiosyncrasies occur at times with reference to any form of food that you undertake to feed the baby? A. There seems to be more variation in the quality of the milk of women than in the milk of cows. I think the female of the human species seems to be (T. 439) on the way out so far as breast feeding is concerned, and one trouble may be the quality of the human milk as well as trouble in the human newborn. But the statement is true that he gets success with various modifications and substitutions, and it is largely by trying at it.

Q. The pediatrician has to be trying first one thing and another until he finds— A. (Interrupting) Something that will carry on, and they are not entirely agreed.

Q. Is there anything in your mind why, in making the trials around, he shouldn't try this product along with the others that are available to him? A. No; no. If the child does not have particular idiosyncrasies, if he is pretty well, is not premature, if he has his gastric juice and the pancreatic juice and his bile and feed in decent quantities, he may carry on. I would take my chance in bringing my own baby up on it. (T. 440).

Q. What about the necessity of Vitamin E to a young infant? A. On the basis of present knowledge, I wouldn't worry, but we may some day discover something new. In ordinary families and ordinary conditions, they soon begin to supplement milk or anything else with other things, vegetable, berry or fruit juices, even within the first two or three months.

Q. What about Vitamin K? Where is it found? A. That is pretty widespread in nature, too. It isn't clear at

present, so far as I know, that the tendency to capillary hemorrhages in infants, in very (T. 442) young infants, is primarily a matter of Vitamin K. It is probably more a matter of liver damage. Chances are that some of these vitamins, if the mother has good food during gestation, will be stored in considerable abundance in the liver of the infant and on the basis of that can carry on, like it carries on the store of iron in the liver. (T. 443).

A. When we discover we destroy dietary deficiency in a rat or guinea pig, obviously you can't apply that without check, without seeing whether it does apply to man. It would be pure folly, for example, to reason that scurvy cannot be produced in man by lack of Vitamin C because you can feed the rat *ad infinitum* a diet lacking Vitamin C and you don't get any scurvy. There are differences (T. 445).

Cross Examination.

Q. Dr. Carlson, will you give us a brief discussion on the importance of using whole food entities such as whole milk in the diet of a population particularly in the diet of infants? A. Well, in the diet of the population as a whole, I don't know any advantage of whole milk over other good foods such as meats and grains, vegetables. In the diet of infants, whole milk, if they can stand it, or modified whole milk is on the whole easily available and closer than any other natural food to the breast milk. I suppose some of the artificial blends of baby foods may come just as close, but it is generally there. The wisdom of the ages, and certainly the wisdom of the pediatrician and the sensible mother and nurse now realizes that you have to supplement the whole cow's milk

or even the mother's milk very early in the infant, certainly with iron and probably also with puree of vegetables or fruit juices; but to the extent that milk is produced—I will come back to that again—the infant being used to milk, he may not take the vegetables so readily, fruit may not be available. I think milk, whole milk, is a dietary saving but we know perfectly well that most animals below man get no milk in their diet after they are weaned and many groups of humans, as I mentioned this morning, get no milk after they are weaned and they get along just as well as we (T. 449).

Q. Doctor, on the basis of what you have said, would you recommend that a compound such as Milnot here be used in place of whole milk in the diet of children or infants? A. I have never recommended that it be used in place of it. You mean that I would recommend that you should not use whole milk and use this in preference?

Q. Yes. A. No, I never so testified.

Q. Would you recommend it that way? A. No; I am no enemy of whole milk. I hope the Court will understand that.

Q. Doctor, do you think it would be in the interest of the nutrition of the people of the United States if all of the evaporated milk concerns would start making such a product as Milnot here, substituting the butterfat with some vegetable fat, such as cottonseed oil and soybean oil or corn oil or some of the other vegetable oils, supplemented with some Vitamin A and D in place of continuing to make evaporated whole milk? A. No, I would say let them continue to make evaporated whole milk, but I would say let all of the milk industries then go on and use the

skimmed milk which is not now consumed or used for human food in similar products to that or something equally good, and—

Q. (Interrupting) As—

Mr. Clark (Interrupting): Let him finish (T. 451).

A. And start education so that the people will see the advantage of using it. One reason back of that is that I think that that probably could be distributed, if there were honesty along the line, at much less cost than evaporated whole milk and this cost is a tremendous factor in nutrition (T. 452).

Re-Cross Examination.

Q. Doctor, do you understand now when they make this product, they take the whole milk and separate the cream and then take this skimmed milk, after taking the cream off of it, and put into this product? With regard to the cream portion taken off, they churn it and make butter and then they have, I understand, some buttermilk left. Isn't there certain nutritional value in that buttermilk? A. Oh, yes.

Q. That isn't put back in this product? A. I don't know, probably not, no.

Q. Then, if that— A. (Interrupting) But there is no new nutritional value in the buttermilk.

Q. How is that? A. There is no additional nutritional value in buttermilk, as compared to skimmed milk. There may be a little (T. 453) more butter in buttermilk than in skimmed milk. There may be. Usually as used in the homes or on the farm, there is some fermentation of the sugar in milk so it is sour, but otherwise the nutritional element in buttermilk is no different from skimmed milk.

Q. How about phospholipins? A. There wouldn't be any more of them than in skimmed milk except to the extent that there is more butterfat.

Q. Have you ever run any tests on the phospholipins in buttermilk? A. I have not" (T. 454).

DR. JOHN AULL.

(T. 458-475.)

Direct Examination.

Dr. John Aull testified that he was a physician living in Kansas City; that he started practice in 1916, practiced for a year, was in the army for 22 months and had been in practice since that time; that he went to the public schools in Lexington, then to high school, graduated from Wentworth Military Academy, obtained a Bachelor of Arts Degree from Missouri University, graduated from Johns Hopkins University Medical School, spent 22 months in the army and then returned to Kansas City. That he was with the University of Kansas Hospital at Kansas City, Kansas; also on the visiting staff of St. Luke's, Research, St. Mary's, St. Joseph's and Menorah Hospitals, all of Kansas City. That he belonged to the Jackson County Medical Society, State Medical Society, was a Fellow in the American Medical Association, member of the Kansas City Academy of Medicine, Kansas City Southwest Clinical Society, member of the American Academy of Pediatrics and was a licentiate of the American Board of Pediatrics, and a member of the State Board of Health of Missouri; and was an Associate in Pediatrics at the University of Kansas Medical School, lecturing once a week and holding a clinic once a week (T. 458-459, 466):

That he specializes in Pediatrics, children's diseases, which includes the study of nutrition for children; that as a part of his profession he supervises the feeding of children from the time they are born, and has been engaged in this practice of the profession ever since he started the practice of medicine; that he read a great deal of literature on the subject and tried to keep up with what was going on.

That skim milk is a food recommended by the profession as suitable for humans and that many infant foods are fortified by cottonseed oil which is used in other foods daily.

The witness testified that the product covered by the stipulation was a wholesome, nutritious food for human consumption and for the use of children and infants (T. 463). That there are a number of products suitable for young infants, containing vegetable oils, which are recognized by his profession for use in feeding infants and used by pediatricians; that he knows of no injury to the public health by the use of such foods (T. 463); that from his study of nutrition he knows of no recognized authority contending processed foods containing skim milk and cottonseed oil are injurious to the public health (T. 464).

Cross Examination.

On cross examination the witness testified that he was not prepared to give a long list of prepared baby foods containing vegetable oil, but Similac was one which contained either coconut oil or cottonseed oil (T. 466); that S. M. A. is another very popular one; that Soybee is another containing soybean oil; and Olac is another one containing a vegetable oil. That all are specially prepared

foods for infant feeding; that they are on the market in drug stores, but they ought to be in grocery stores. He was not sure whether they were on sale in grocery stores or not (T. 467).

That in his practice he recommended these foods for use in infant feeding (T. 467); that he usually used fresh cow's milk formulas and he did not say that he would use products consisting of evaporated skim milk and cottonseed oil fortified with vitamins A and D in preference to whole milk for infant feeding. That he had not used the products of Milnot or Carolene, and his knowledge as to the effect it would have upon a child was based upon what the profession knew of the factors in milk essential to the human and the supplying of certain deficiencies which were understood by the profession; that these things were known by experts in infant feeding (T. 468).

"Q. The method and manner of determining whether these various factors in milk, we will say, are good or not good for an infant is carried on, is it not, by the research men? A. No, I wouldn't say so at all. He fundamentally is just doing a long chain of experimentation and improving what we knew about nutrition, and the research man, he gets interested in a certain subject that he thinks is going to improve the nutritive value of a certain food and he does a piece of research work on that and he will apply that to guinea-pigs or rats or rabbits or dogs or some animals. When he thinks he has found something then he presents his information to the medical profession in the form of a food, or what not, in a way it can be taken and utilized, and those of us who practice medicine, we apply it to our patients and if we find by giving it a trial with our patient that it

has been successful and we think it has improved the nutritive value, that it has been beneficial and has helped to improve conditions, of course, it sticks; but very much experimental work is tried out by clinical medicine and dropped, many many times more than is continued." (T. 469).

That he did not know whether the medical profession had recognized the product in question, and he had not had any clinical experience with it (T. 469). The witness further testified that he had never gone to the trouble of investigating any of these baby foods to determine the oils used in them, but he had a very definite impression that cottonseed oil or coconut oil was used in most of them; that he knew that those two oils were used in most infant foods (T. 471-472).

Re-Direct Examination.

On re-direct examination the witness testified that he would not use whole cow's milk, fresh or evaporated, for the feeding of an infant under one year; that he always diluted and modified it; that he used a formula in which he used fresh cow's milk, but that most of his profession preferred to use processed foods (T. 472).

That if an ignorant mother fed the product in question to an infant, he could not conceive that it would do any particular harm or that it would do any more harm than if she used evaporated milk (T. 473).

Re-Cross Examination.

The witness testified that he considered a "processed food" to be a food cooked down and put in cans and possibly fortified; that he considered evaporated milk, S. M. A. and other like foods processed foods (T. 467).

That he did not say that Olac was used more than evaporated milk, but that more "processed foods" were used than fresh cow's milk. That in diluting or modifying cow's milk he used so many ounces of milk, so many ounces of water, then added sugar, carbohydrate, and vitamins through the use of cod liver oil (T. 474).

Re-Direct Examination.

The witness stated that he used cod liver oil with natural milk to supply vitamin A and D and also because of the long use of cod liver oil and its beneficial effect. He assumed that there were beneficial qualities of cod liver oil not entirely known and which could not be now scientifically explained (T. 475).

DR. DAMON O. WALTHALL.

(T. 525-561.)

Direct Examination.

Dr. Damon O. Walthall testified that he lived in Johnson County, Kansas, but maintained an office in Kansas City, Missouri. That he was a physician, specializing in diseases of children, pediatrics, and he had been engaged in the practice for about 18 years. With reference to his qualifications, he stated:

"A. I have a B. S. degree from the University of Michigan Literary College and M. D. degree from the Michigan College of Medicine. My post-graduate work was down at Children's Hospital, Boston, which is a part of Harvard Medical School; then instructorship at the University of Michigan during 1918, '17 and '18; then First Lieutenant in the Medical Corps, United States Army in 1918-19, an instructor at the University of Kansas in

pediatrics from 1920 to 1929; member of the Jackson County Medical Society, American Medical Association, American Academy of Pediatrics. They have also a Pediatric National Board of Registration of which I am a member; the Kansas City Southwest Pediatric Society; the University of (T. 525) Michigan Pediatric and Contagious Diseases Society, of which I was President in 1939; the Kansas City Academy of Medicine, which I was President of in 1938; the chief of the pediatric staff of the Kansas City General Hospital since about 1925.

Q. Where is that hospital located? A. That is at Kansas City, Missouri.

Q. What are your duties in connection with that hospital? A. Well, it consists of clinical work as well as teaching. We have quite a corps of interns and nurses that we teach and it is recognized by the College of Surgeons as a hospital that does enough teaching to sponsor their fellowships in various specialities, and we have a resident pediatric doctor whose work there is recognized throughout the country as being passed by the College of Surgeons" (T. 526).

That he taught pediatrics in that hospital which is one of the largest general hospitals in the country and has an equally large pediatric service, with a capacity of about 60 beds, and an out-patient service that sees upwards of thousands of patients each year. That in addition to being connected with this hospital that he was on the staff of St. Luke's Hospital, Trinity Lutheran Hospital and St. Mary's Hospital, all of Kansas City, Missouri (T. 526).

That the greater part of the work of pediatrics deals with the nutrition of the small child from birth to 14 years of age, but the greater bulk of the feeding problem

is from birth to the second year. That he had kept up with the progress of the science of feeding children; that aside from his professional experience, he read the medical literature and at least twice a year attended meetings sponsored by the Academy of Pediatrics and the American Medical Association.

Q. What is the difference between information or experience acquired by research and experience acquired by clinical practice? A. Well, first, usually the problem is worked out, or an effort is made to work it out on animal experimentation, and we speak of that largely as 'research.' Then in addition to that, some teaching institutions have a plan of repeating this research on human individuals where they are very sure that will do the human individual no harm. Then that is only about half the story, because until that is actually put out into practice and men who are doing general practice find that clinically that information works, why, not until then is it thoroughly accepted. If it isn't proven clinically, all the experimental work is thrown out as not applicable to the human being, although it may be applicable to the animal experimentation.

Q. The research work that is done by the biochemist, for instance, he has usually no opportunity to subject that to clinical work unless he is working in connection with a physician? A. I think that is right.

Q. If the biochemist conducts experiments, comes to certain conclusions from animal experiments, then that is taken up by the doctor and gradually put into use, first by experimentation with human beings and then in the actual practice of his profession? A. That is right.

Q. You are engaged in the active practice of your profession? A. That is right.

Q. Besides the other duties that you have mentioned? A. That is right.

Q. In the actual practice of your profession you then have had experience in the clinical problems of feeding, as well as access to the research results? A. Yes, every day that research work that we hear at the meetings and read in the medical literature is put into actual practice with our private patients (T. 528).

Q. In the final analysis, the acceptance of a food, the determination of its usefulness as a human food, as I understand you then, rests with the physician? A. From my point of view, it absolutely does.

Q. And if that food is an infant food, it rests more particularly with the branch of medicine that you practice, which is called 'pediatrics'? A. That is right.

Q. Doctor, is cottonseed oil recognized as a wholesome, nutritious food in the United States by the profession generally? A. I would say that that, along with other vegetable oils, has certainly been recognized as a nutritious food.

Q. Is there any difference in the nutritive value of the various vegetable oils, such as cottonseed oil, soybean oil and other vegetable oils? A. As I understand, the nutrition of one is equal to the other.

Q. Has skimmed milk, dried skimmed milk, condensed skimmed milk and condensed sweetened skimmed milk being recognized as wholesale foods in the United States for a long period of time by the profession? A. Yes, it has.

Q. Are cottonseed oil and the other vegetable oils used in skimmed milk in the United States as a food either separately or in combination with other ingredients? A. They have been for quite a number of years" (T. 527-529).

The witness testified that he had not done a chemical analysis of Caroleñe and Milnot, nor had he done any experimental work on animals, but that he had used it in the feeding of human individuals.

The witness testified that the product covered by the stipulation was a very useful and wholesome and nutritious food for a human being, including children as well as adults, and that it would be a much better food for infants than it would be for adults.

Q. Why? A. Because you are presenting them with a fat that is more absorbable and digestible than any other known fat. You are presenting them with a protein that has been in its evaporation soft curded so that it would be digestible. You are presenting them with the necessary vitamins for that age, that is, not all of the necessary vitamins, but at least two of the most essential vitamins of that age.

Q. Doctor, does your profession recognize processed foods of this nature as being wholesome nutritious foods for the feeding of infants? A. Yes, it does.

Q. Are some of such foods approved by the American Medical Association Council of Foods? A. I am quite sure they are.

Q. Are such foods referred to and recommended by the literature of your profession? A. They are" (T. 531).

That one of the first foods containing vegetable oil that pediatricians became interested in was S. M. A., which is a food now recognized and used by pediatricians for the feeding of infants; that it is quite extensively used in the feeding of children (T. 532-533); that he also was acquainted with Similac, and that he used that food probably more than any other food except breast milk (T. 534); that Similac contains vegetable fats and milk.

Q. Tell the Commissioner whether or not in your experience with it, it has proved to be a satisfactory, useful, nutritious, wholesome food for the feeding of infants? A. It has been very satisfactory. May I insert?

Q. Surely. A. My own youngest son was not able to be nursed by breast so we put him on cow's milk mixture, in which he was a summer baby and did very poorly with diarrhea and vomiting, but after a day or so of rest on cereal water, he was put on Similac and thrived into a very fine youngster.

The other interesting problem that has not been brought out from a chemical point of view or from animal experiment point of view is that our experience with this boy was that not until after he was over five years of age could he take any milk excepting Similac. Each time he was presented with cow's milk after a few days of losing his tolerance to it, I suppose, or building up too great an amount of cow's milk in his intestinal tract, he would have 24 to 36 hours of vomiting and diarrhea, which, after a period of rest, would quiet down and he would go ahead on Similac for another period.

Q. Doctor, are there others of these foods recognized by your profession? A. There are quite a number of

others. It seems to me like—I don't know whether this is the right time for presenting my feeling about the sort of history of the development (T. 536).

Q. Well, I wish you would just go ahead. A. I don't know whether this is what you would like here or not.

Q. I suppose it would be as orderly to present it here as anywhere else. A. You see, the natural food for a human being is its own mother's milk, and, of course, the percentage of fat, protein and sugar in that are quite distinctive, and, of course, uniform, depending upon the mother's ability to produce breast milk and her diet. Of course, the fat in her milk will vary depending upon the fats that she eats. The protein and vitamins will also vary with the foods that she eats. Therefore a mother who cannot nurse her baby for many reasons of either disease or amputation of a breast or occasionally we have even a child who will not be able to tolerate his own mother's milk, so that it falls to our lot to try to substitute some food that will be as near as possible like mother's milk. Now, as you well know, in a cow's milk is the natural food for a calf. It has a double stomach and takes this food in and does a partial mixture and digestion and ruminates it and then redigests it again. One of the biggest factors that we have always felt that prevented a human baby from digesting cow's milk was the fat, and ever since I have studied pediatrics and thought with pediatricians or worked with pediatricians, that has been the main source of difficulty in feeding a human baby cow's milk. And practically all of the liquid milk formulas in our hospitals in Kansas City are

made up of skimmed milk and not until the child is older do we dare use a butterfat in its natural form.

Therefore, with an effort to make a milk suitable for babies that would have a fat that at least premature babies and small babies could digest, the chemists and pediatricians have gone to other fats to try to find a preparation that would fit in with that type of feeding. Dr. Gerstenberger of Cleveland developed S. M. A., in which he calls it a synthetic milk adapted—I mean by that that he is making a great effort to try to produce a milk as near like mother's milk (T. 537) as possible, and in that he found that if he would put in a vegetable oil along with cod liver oil, that in his opinion he had a more digestible fat. And that is practically all in S. M. A. that has been changed is that he has changed the fat and added to it vitamins. And down through the years—I think he developed that very shortly after the war. I think I heard about it first along about 1924 or 1925 and I have used it off and on since that time with very good success.

Then Bosworth, a milk chemist who worked on the Boston Floating Hospital when I was on the hospital, he felt in the back of his mind the same thing that Gerstenberger had worked out with S. M. A. So he worked out, I think first Recolac, then later abandoned it and developed Similac. In his Recolac he used some animal fat, such as lanolin in addition to his vegetable fats. But his last effort was Similac, in which he uses a vegetable fat. And those two foods with these others—and I have perhaps preambled a little on this, answering your question as to naming some of the others—I thought if I explained how he first developed Recolac and then later Similac.

One of the latest food processing companies to come on the market with a food with a vegetable oil was Meade-Johnson with Olac, in which they use a vegetable oil, and on their description they speak of it as olive oil, and they use halibut liver oil for their Vitamin D rather than straight cod liver oil. The Olac, as I understand it, was developed after the work that Dr. Holt did, who is one of the outstanding pediatricians of the United States, and they (Meade-Johnson), on his work with vegetable fats and particularly olive oil, developed Olac. I don't have a list of the others, but there is quite an extensive list that has been used (T. 538).

Now, in addition to these milks in which they have taken skimmed milk and added vegetable oil, as I have mentioned here, we have had quite an extensive play with soybean oil, and that type of food has been largely developed for the allergic patient, and in most instances with soybean oil, the soybean itself, they have used it without using—that is, in most instances, not all—without using any cow's milk protein at all in an effort to get a food suitable for this allergic group of patients. Those foods with soybean oil have been a very satisfactory food for the allergic patient who cannot tolerate butterfat or the protein of cow's milk at all, and soybean has been a very satisfactory preparation.

Q. Doctor, I believe before you came into the hearing room, you handed me an advertisement of The Borden Company? A. Yes; just the other day Borden detailed me on Mull-Soy. I haven't had the pleasure of using this preparation yet. I don't know just how new it is, but we have had other companies making a complete food from soybean, soybean milk under various names. This looks

like a very good preparation and the first allergic patient I see, I am going to try this Mull-Soy of Borden's to determine its value clinically. They come with this preparation worked out from a chemical point of view and probably animal experimentation point of view that it is going to work, but not until we pediatricians take it and give it to the patient are you going to know whether it is going to be a go or whether the Borden People are going to give it up as a no go. It depends on clinical trial.

Q. It is going to depend, in other words, upon the experience of the pediatricians that feed it? A. Yes, sir" (T. 539).

That Mull-Soy is one of the most recent of the prepared baby foods put on the market; that Dr. Gerstenberger, who developed S. M. A., was head of the Children's Hospital at Cleveland and Professor of Pediatrics at Western Reserve University (T. 540).

Q. Now, in testimony here, the pediatrician testifying referred to feeding formulas that they used for the feeding of infants, referred to such formulas even where natural whole cow's milk is used. What do you mean by 'feeding formulae'? A. Well, back to the statement I made a moment ago, in taking even liquid whole cow's milk or the whole cow's milk as evaporated or the whole cow's milk as condensed, these food elements have to be modified in an effort to fit the human child, human baby, we will say, not only his nutritional needs but his capacity to digest these foods, and in an effort to meet that equation these foods are diluted and some of them are acidified and various other procedures are done to make this food more digestible and more tolerant and more absorbent for the human infant.

Q. That applies even to the cases where the doctor is using natural milk? A. That is right.

Q. He prepares his own formula or takes somebody else's formula and changes the product to meet the baby's needs and ability to digest food? A. That is right.

Q. So that the difference between using these prepared foods and cow's milk is pretty much a question of formula after all? A. That is right.

Q. And that applies if you use evaporated milk? A. That is right.

Q. You have to change it to conform to the formula that by experience had been found to be valuable? A. That is right (T. 540).

Q. That brings me to this question, Doctor: Give your opinion as to whether there would be any danger to the public health by the sale of this product under consideration here, due to the possibility of some ignorant mother getting ahold of it, not able to read the label, and feeding it to an infant child instead of evaporated whole milk?

Mr. Lillard: You are referring to the defendant company?

Mr. Clark: Yes, I am referring to the defendants.

A. I would say this: There would absolutely be no harm in feeding a human baby that product as it was detailed in your question. Also I would say you brought in about the ignorant mother, I would say that in her ignorance she probably was doing her child a benefit rather than to feed it some uncontrolled milk that in her status of life she might get ahold of.

Q. As compared with evaporated milk, does this product, that is, defendant's product Carolene and Milnot,

have any advantage? A. It has the advantage in which, except in certain instances in which they have added other vitamins to the evaporated milk, it has that advantage in that there are Vitamins A and D very definitely added to the product to make it a better food for the infant who is taking only a milk food:

Q. Do I understand you then correctly that in your opinion the feeding of defendant's product in the place of evaporated milk to an infant would result in no harm, if you exclude the tolerances or the idiosyncrasies of the child that it might be susceptible to either by evaporated milk or this product? A. That is right; there would be no harm in the defendant's food.

Q. And is it your opinion that it would be, if there were no tolerances interfering, it would be as satisfactory as a food and more satisfactory, as to the vitamin content, than evaporated milk? A. It would (T. 542).

Q. Doctor, do you know of any recognized scientific authority in the profession that holds to the proposition that the use of foods such as we have been discussing here, the combination of evaporated skimmed milk and vegetable oils fortified with vitamins, the use of such foods is injurious to the public health? A. I know of no authority that would hold to that.

Q. Is there any recognized authority that you know of that holds to the proposition that the use of vegetable oils, including cottonseed oil in foods and food compounds, is injurious to the public health? A. I know of none (T. 542).

Cross Examination.

On cross examination the witness testified that he did not think that the A. M. A. had recommended this

product. He thought the only reason was that the council would not recommend anything that was the subject of litigation (T. 543).

That he considered Similac preferable to whole milk in the feeding of infants (T. 553). That he did not recommend it in every case because it might be shown the child by actual trial could not digest it, in which event he would recommend some other, perhaps liquid cow's milk or some other prepared food (T. 554).

"Q. In other words, unless the child has some trouble with its feeding, why, you would not recommend these? A. Again I think that is pretty hard to pin me down on because I would use either one of these to supplement breast milk in the well baby, and I would also occasionally use it where the baby is having indigestion in place of other types of milk because of the fact they have a different type of fat and a more digestible protein that the babies will often do well on this when they will not do well on the other type of food. So that each individual—you can't pin a doctor down to say that he uses this and nothing more because you can't look at me and say that I can't digest cow's milk, which I can't do, and I drink none at all, you see, because it makes me sick. I just probably have an intolerance or a weakened digestion to that, just like I can't look at you and say, 'You had better not eat a chicken because you will wake up with a migraine headache.' That is how variable the practice of medicine is. You can't pin a man down and say he uses nothing but that on every patient. We have to select the food to fit the patient.' I may have misunderstood what you were driving at" (T. 554-555).

That he did not know what was in Similac because it was a secret formula; that he understood that the purpose of S. M. A. was to produce a combination which would be more nearly like mother's milk than the separate ingredients (T. 555). That the product in question was similar to S. M. A. in that they both started out with the same elements but that they differed in that one was dried and the other was only evaporated. He thought that they both had cottonseed oil and he could see no objection to selling S. M. A. or similar products in grocery stores. He had used it on his child until it was 5 years old (T. 556). That a mother would not know which one or the other she could use in a particular case but she would have to go to her doctor, "just like she already goes out and uses Eagle Brand and gets her child sick and comes in and we have to put it on something to make it well." That he might use the product Carolene on one of these cases after he had analyzed the case; that the mother should not make up her mind as to a formula but should go to a pediatrician; that he would not advise the ordinary housewife to use this product without the advice of a physician, any more than you would expect her to take a can of evaporated milk off the grocery shelf and give it to her child. Doctors would much rather have her come to them first and have them tell her how to use evaporated milk.

That Similac and S. M. A. were often purchased at the drug store and at grocery stores where they also purchased evaporated milk or cow's milk used in a baby's diet (T. 557); that in a small baby the most frequent case of allergy is the use of cream (T. 558); that when a pediatrician sees a baby with scaly, oily crusts on the face or body,

he removes the butter fat and that often cures the child (T. 559); that children are more frequently sensitive to butter fat than to the protein constituent of milk (T. 559).

The witness testified that he knew what Carolene is from the description of it; that he had drunk it and used it in his coffee and now had some patients on it (T. 559); that he had been using it a month or six weeks in feeding babies, largely ranging in age from six weeks to six months; that he had three or four on Carolene (T. 560).

"Q. Did you do that after you talked with these gentlemen? A. I don't think I talked to them. What they do here, they detail us in the office just like Borden's man came in two days ago and presented me with Mull-Soy, and he will in due time send me some cans of that and the first allergic patient comes along, I will try that on him. If it works, I will say that is a good thing, and the next one that comes along, I will try it again, and this other product was handled in the same fashion" (T. 560).

That the babies had been on the product about 6 weeks and two of them had been back in and had made nice gains and were doing nicely (T. 560); that he had made no experiments on animals and did not know what the histology of the product would be on the babies' tissues (T. 560), but from outward appearances and growth, which could be determined by examination, it was determined that they were doing well (T. 561).

"Q. Doctor, would you recommend that a mixture such as the defendant's product, Carolene and Milnot, consisting of skimmed milk and a vegetable oil, such as cottonseed oil, fortified with Vitamins A and D be substituted for whole milk in a diet of infants and children? A. I think they would have as good a preparation as they

would in ordinary whole milk, and I think I would go a little bit farther and say they would have a better preparation because they have A and D vitamins in this product that they wouldn't have in just ordinary whole milk; and if you are going to say, 'What about evaporated milk with Vitamin D, certified milk,' then I would say there was an equal chance that one would be just as nutritious as the other; but if you take the ordinary whole milk like is put out and passed out as pasteurized milk, I think you would have a better product in this preparation.

Q. I again repeat my question as to would you recommend this product be substituted for whole milk in the diet of infants and children throughout this country? A. Yes, I would, because they would certainly have a safer product and one that was certainly cheaper than they can buy when they go out and get regular whole milk."

DR. VINCENT L. SCOTT.

(T. 569-618.)

Direct Examination.

Dr. Vincent L. Scott testified he was a physician, specializing in the diseases of children and infants; that he engaged in his practice in Wichita, Kansas, where he had been for about seven and a half years. With reference to his qualifications and experience, he stated:

"I received my A. B. Degree at the Phillips University in Oklahoma in 1925, was graduated in Medicine, Degree of M. D., in 1929, Western Reserve University at Cleveland, Ohio. During my student years I spent two years assisting research in contagious diseases with Dr. John Toomey at the head of the Contagious Service, interned at Cleveland City General, rotating internship for

one year and thereafter four years at Babies' and Children's Hospital, specializing in children and infants. Last year there I taught the senior medical students, clinical pediatrics. Since then I have been in Wichita. There I have taught classes in pediatrics and in contagious diseases." (T. 569).

That he had continued to specialize in pediatrics, that is, the treatment of infants and children; that he had studied nutrition, and the feeding of infants, had studied authorities and kept acquainted with the latest on the science of infant feeding; that he had obtained his information, aside from his own personal experience, from reading medical journals, including those of his own specialty, such as the Journal of Pediatrics and the Journal of A. M. A., and by attending medical meetings and conferences, as well as intercourse that goes on between doctors. That this study and experience included a study of the nutritional aspects of animal and vegetable fats and oils; that he spent his internship in The Babies' and Children's Hospital of Cleveland of which Dr. Gerstenberger was the chief; that Dr. Gerstenberger had devoted most of his professional life to the study of infant feeding, including the use of animal and vegetable fats in the preparation of foods for infants (T. 570); that he developed the first such infant food, S. M. A. (T. 571).

"Q. What is the difference between information or experience acquired by research and experience acquired by clinical practice? A. Well, research experience, of course, well, basically, at least, it is animal experimentation, that is, there, fats—taking that as an instance—are fed to animals and the results observed and, of course, in some cases their research is carried further and applied

to human beings. Then in turn it is referred to the doctors who are practicing and they, of course, feed it in their regular daily practice and any substance that has been tested, rather, research made, to which they react favorably, they think it is a good product. They turn it over to us as sort of a final court of appeals and, if it is fed clinically and works out well, then that is the final conclusive evidence.

Q. In the actual practice of your profession, you have had experience in the clinical problems of feeding, as well as access to the research results, I believe you stated? A. That is right.

Q. In the final analysis of the acceptance of a food, determination of its usefulness as a human food, as I understand you then, rests with the physician? A. Yes, it must.

Q. And as to infant feeding, with that particular branch of your profession known as 'pediatrics'? A. With the pediatrician" (T. 572).

That he had read the testimony of Dr. Anton J. Carlson taken in this case, and he agreed with the conclusions as stated in his testimony, that the food covered by the stipulation is a wholesome, nutritious food, particularly good for adults, children, and infants, and that the use of such a food is not injurious to the public health (T. 576). That to his knowledge there is no recognized reputable authority holding that the use of pure refined cottonseed oil as a food for human beings is injurious to public health (T. 576); that he knows of no difference of opinion existing in the field of science regarding the nutritive contents of cottonseed oil, and its effect upon the public health when used as a food for human consumption.

tion; that he had learned of no case of injury to the public health from the use of pure refined cottonseed oil as a food for human consumption (T. 577); that cottonseed oil has been used for human food for about 2,000 years, but was not used in its present refined form until around the turn of the century; that he is acquainted with the composition of cow's milk, and it is thought of as containing three main things, the fats, the protein, the carbohydrate, and he would also say that the vitamin content is important; that cow's milk is not a perfect food; that about two-thirds of the food value of whole milk is found in the skim milk and one-third in the cream; that the solids remaining in the skim milk are very important to human nutrition (T. 577), and are an economical source of food for humans. That there is a very definite need for wider consumption of skim milk in order to improve the conditions of diet in the United States; that this is generally recognized by experts in the field of nutrition.

That he also is acquainted generally with the sources, utilization and nutritional qualities of the generally recognized vitamins; that cow's milk contains various amounts of vitamins A, D, and C and small amounts of vitamin B complex; that they are divided into two classes, the fat soluble and the water soluble. The fat soluble vitamins are entirely in the cream and the water soluble vitamins are always entirely in the skim milk; that vitamin C is the antiscorbutic and scurvy appears in its absence. That pellagra and beriberi occur when there is a lack of vitamin D; that there are a number of the vitamin B complex whose function is not well known yet (T. 578). That vitamin A is a fat soluble and in its ab-

sence xerophthalmia appears, in the absence of vitamin D, rickets develop; that all of these vitamins are definitely important and are contained in milk, and that it also contains traces of other vitamins, such as K and E which are of no importance in infant nutrition; that vitamin A varies in cow's milk according to the cow and according to the type of her food. In winter when there is little green food it drops very low, about 400 units to the quart, whereas in the summer when they are getting a lot of the green foods it jumps up to around 2,000 units to the quart. That vitamin D has as low as 8 units in winter to 80 units in summer; that both vitamins A and D vary according to the season of the year, the type of animal and the food that they are given.

That the other principle sources of vitamins A and D are fish liver oils. They vary throughout the whole fish world from cod liver oil to shark oil (T. 579).

That it is possible to fortify fat bearing foods with high potency vitamins A and D secured from fish livers, and that they are equal in nutrition with vitamins supplied though butterfat.

That carotene when mixed with cottonseed oil is absorbed much more readily and quickly than when it is mixed with butterfat.

That it is common practice to fortify whole milk and evaporated whole milk by adding fat soluble vitamins A and D; that a can of Page Special Evaporated Milk, handed the witness, was evaporated milk to which has been added extra vitamin content derived from pure cod liver oil (T. 580-581); that skim milk by itself is a pure nutritional food and cottonseed oil may be mixed with it without injury to the nutritional properties of either or

the combination of the two; that in his opinion the mixture of pure skim milk and cottonseed oil does not render either ingredient or the combination of them harmful for the use of humans as a food. That to his knowledge there is no reputable recognized or competent authority to the effect that the mixture of pure skim milk and cottonseed oil would render either pure skim milk or cottonseed oil or the combination of the two harmful for the use of humans as a food (T. 583).

Q. How does pure refined hydrogenated cottonseed oil and butterfat compare with respect to edibility, digestibility and nutritive value where used as a food for humans? A. The cottonseed oil will compare very favorably with butterfat. There is a slight difference in taste that one might object to at first certainly, but as far as actual nutrition and general use, there could be no objection at all to the use of cottonseed oil" (T. 584).

That there is no difference of opinion in the field of science regarding the conclusions he had just stated; that he had become acquainted extensively with the use of pure refined cottonseed oil as a food for human consumption, and it is widely used in oleomargarine, salad dressing, salad oils and mayonnaise; that there has been no history of injury through the use of cottonseed oil as a food for human beings (T. 585).

Q. What are the relative merits of cottonseed oil, soybean oil, peanut oil, corn oil and cacao butter as a food for humans? A. I think we answered that or a similar question before. It was stated then that the cottonseed oil was more digestible, that the cacao butter comes at the bottom of the list being less digestible.

Q. Then your opinion would be that the cottonseed oil would have advantage over the butterfat? A. I would have that advantage and certainly no disadvantage.

Q. Does butterfat used in infant nutrition contain any irritating factors not found in the refined edible vegetable oils? A. Yes, there are approximately 10% volatile fatty acids in the butterfat which are not present in the cottonseed oils or in the vegetable oils and these are very definite irritating factors in the diet of a young infant.

Q. What is the state of opinion among pediatricians, physicians, nutritionists and dieticians concerning the safety of the use of pure refined cottonseed oil in infant and adult foods in combination with pure sweet skimmed evaporated milk and pure natural source vitamins A and D from fish liver oils as contained in the product involved in this case? In answering this question please state whether such use is safe for the consuming public, and whether there is any difference of opinion on the question by physicians, nutritionists and dieticians. A. I don't believe there is any difference of opinion. I believe they are all agreed that it is a perfectly safe product. I think it could be placed on the general market and certainly be as safe as any other milk product put out for a similar purpose" (T. 587).

The witness testified that the product covered by the stipulation is a wholesome, nutritious, useful food for human beings, for children, and for infants (T. 589).

Q. Such a food, in your opinion, how does it compare with evaporated whole milk in nutritiousness, wholesomeness and usefulness? A. Well, in infant feeding, it would be better in two respects, the one I have al-

ready mentioned, the fact that it does have a higher vitamin content in speaking of vitamins A and D, and again we mentioned a while ago the volatile fatty acids which are present in cow's milk which, of course, are also present in the evaporated milk, and it is the volatile fatty acids which give us a great deal of trouble in feeding infants. Many infants do not tolerate these acids at all well, and consequently cannot take butterfat in their diet; and in the product here, we have a product that has no such fatty acids present and consequently will be better tolerated than will the evaporated milk.

Q. Does your profession generally recognize processed foods of this nature as being wholesome nutritious foods for feeding infants? A. Yes, they do" (T. 590).

That some of the special baby foods are approved by the A. M. A. Council of Foods. The following are listed as acceptable: Alpha-Lac, a product of the Alpha Milk Laboratories, Sacramento, California; Melcose, a product of Baker Laboratories of Cleveland; Olac, a Mead Johnson product; Similac, a product of M. & R. Dietetic Laboratories of Columbus, Ohio; Lactogen, a product of Nestle's Milk Products of New York; S. M. A. Powder and S. M. A. Concentrated Liquid, produced by S. M. A. Corporation of Cleveland (T. 590-591).

That he was familiar with the S. M. A. Liquid and had fed lots of it to babies.

Q. How would the value of that product liquid S. M. A. there compare with Milnot or Carolene, the products that I have described to you in the question I asked you, as a food for infants? A. I don't believe there would be any special advantage in the S. M. A. I think they would be pretty good. In some respects I might say

that S. M. A. would be at a disadvantage because it does have a multiplicity of fats, and in dealing with human beings you are going to run onto certain ones that may be sensitive or intolerant to one fat and another one that is intolerant with another, and in a multiplicity of fats you run more chance of having trouble.

Q. S. M. A. is the product you referred to before lunch that was developed by Dr. Gerstenberger of Cleveland? A. That is right" (T. 592).

That he had also used Similac and Olac in feeding babies (T. 592-593); that they are purchased generally in drug stores in Kansas and that often his patients objected to the price of them (T. 593).

Q. Well, we will pass that for a moment. Doctor, would the sale of Milnot and Carolene result in injury to the public health because it might be fed to infant children in the place of evaporated whole milk? A. Not at all.

Q. Would it result in injury to the public health because it might be fed to infants instead of some of these proprietary foods that you have looked at here? A. No, and it certainly would be a much more economical source of food. I think it would be equally good food. I know my patients who are on these products we have just been speaking of here will frequently object to the price and they say, "When can we take the baby off?" They realize it is a good food, they say, "if the baby needs it, but it costs like everything and can we feed it something that will be equally good." If we had a product such as Milnot I think it would answer that very quickly. Otherwise we try to keep them on such a food for a period up to the point where we think they can sustain maybe evaporated whole milk or whole milk dilution.

Q. For economic reasons, however, in most instances, or in a good many instances, you get away from these high priced foods as soon as you can? A. Some people just can't stand the tax" (T. 594).

That the profession recognizes foods for the feeding of infants which have no milk in them at all; that in such foods the essential nutritive elements are supplied from other food sources; that Soybee is such a product made from the soybean and is used most often in the feeding of infants allergic to cow's milk. Soybee is entirely devoid of milk fat or milk protein; the purpose of making that product was to give to the infant the elements which they would get in milk which they were unable to take; that in the use of the product, the result had been entirely satisfactory (T. 595).

The witness thought that these prepared baby foods first came on the market in about 1915 (T. 596).

Cross Examination.

On cross examination the witness testified that he had done only clinical investigation work himself during the past seven and a half years; that doctors mostly relied upon men in the research field, but that he had to draw his own conclusions after he had personally tried the product clinically, because the conclusions drawn by the research men can be wrong when taken and applied to human beings; that a doctor might try out food which research men did not approve, but he would be less likely to do so than if it had been approved (T. 597). That if a product was advised against a doctor would probably be unlikely to use it, but if it was just not recommended, he might use it depending upon circumstances (T. 598).

That probably more children are intolerant to the fat in cow's milk than are intolerant to the protein (T. 598); that this had been discovered in research by leaving the fat in milk from a child's diet when it was found that the child improved; that the fat was replaced by adding something to skim milk—some doctors used cottonseed oil, for instance Dr. Holt of Johns Hopkins Hospital (T. 599); that most children get along all right on mother's milk, but a lesser percent get along all right than on breast milk. That he recommended the use of baby foods in place of mother's milk or cow's milk in certain instances where the baby could not take the mother's milk or where it wasn't available; that if mother's milk wasn't available he had recommended such baby foods in preference to whole milk regardless of the price; there are certain cases where it is quite essential regardless of price that the child have such a milk, as those where it can't take cow's milk (T. 600).

"Q. Then you only recommend one of these prepared foods—I think that is the term you used a while ago—where there was an intolerance of some character? A. I see the point you are trying to make. I think I have answered by saying this: There is no doubt in my mind that these foods, if every infant was fed on these foods instead of on whole milk, there would be a lot of children that would not get sick that would otherwise, in other words, that would have trouble with their feedings, and if you were to choose just on that basis alone, one would much rather feed these than they would the whole milk (T. 601).

Q. Now, Doctor, you said, I believe, that this product Milnot is a healthful, nutritious, wholesome food? A. Yes.

Q. And I believe you said that as compared with cow's milk it was better insofar as the vitamin constituent was concerned, and equal value with regard to the other constituents? A. That is right" (T. 602).

That he had become acquainted with the product in question very recently, only a matter of weeks; that he first became acquainted with it when it was mentioned to him by Mr. Clark; that he had used some of it personally, but he had not had occasion to feed it to children, but knew other doctors who had, including Dr. Walthall (T. 603); that he had fed infants on buttermilk; he had used it because of a certain work of a doctor in Germany (T. 603), but he most commonly used lactic acid to acidify the milk (T. 604); that the elements in buttermilk differed somewhat from those in Milnot (T. 604).

There are nutritive elements in it which include fat soluble vitamins A and D and small amounts of water soluble vitamins, and some small amounts of C, B complex, E, and K; that a lot of E and K stayed in skim milk (T. 605); that probably a large amount of K stayed in the skim milk (T. 606).

Q. Doctor, you testified a while ago that there was no competent authority to the contrary but what this product was a healthful and nutritious product. What authorities do you reply upon in making that statement? A. Well, I have never seen anything to the contrary.

Q. What authorities have you read, upon which you make the statements regarding the nutritional value of this product that you have just named? A. I want to

clarify that first. Are you speaking just of this one particular oil or are you speaking of vegetable oils generally?

Q. I will ask you about vegetable oils in general.

A. Well, I mentioned before certain authorities. I mentioned Dr. Holt and Dr. Carlson and I mentioned Dr. Jamieson.

Q. Do you know whether they recommend this product or a product of this nature containing any vegetable oil, including cottonseed oil, to be equal to whole milk in nutritional value for the child, infant? A. Their experiments have shown that it is digested with equal facility.

Q. What is digestible with equal facility? A. That the cottonseed oil is digested equally with the butterfat.

Q. Have these authorities made that recommendation or that statement with regard to this product Milnot? A. I don't think that that is necessarily—I don't believe that is necessary because we are considering the digestibility of this oil when we are talking—

Q. (Interrupting) I just want to know whether they have made that with regard to this product? A. They have made it concerning cottonseed oil, which is the fat under consideration.

Q. But they haven't made it with regard to the combination of cottonseed oil with this skimmed milk and vitamin A and D? You can answer that, I think. A. I don't know that they have.

Q. Do you know whether they have recommended any combination of vegetable oil with skimmed milk as being equal to cow's milk? A. Well, undoubtedly Dr. Holt has. He and almost any doctor in the United States has fed these things and in many cases prefers them to the other.

Q. In what cases does he prefer them? A. I have mentioned before that there are certain infants who cannot take the cow's milk.

Q. Oh, in those instances. Well, now Doctor, when you make a recommendation for the use of some of this, isn't that in cases where some mother has come to you and says, 'I am having trouble with my child. It has the colic, or diarrhea or something else and there is something wrong, and you go out and look at the child and then you prescribe one of these products here?' A. I will answer that this way: I personally probably would do that. However, there are a great number of doctors who feed it merely because it is good feeding and it can be fed and they will expect less trouble from it and consequently they will be bothered less by the patient if they feed this than as though they tried to feed the child on whole milk solution or evaporated; and I speak, for instance, of men who are doing obstetrics. They are interested mainly in obstetrics, and I imagine that 75% of the children that I see where an obstetrician has followed them, say, for the first six weeks, and they are not able to take mother's milk, I have no doubt that at least 75% of them will be on one of these products because it is a product that they can feed without a lot of attention to the child.

Q. I don't understand what you mean by 'they can feed without attention to the child.' A. Just that. The child is going to take food and do well on it and they are not going to have any trouble with diarrheas and other upsets, whereas they would if they tried to feed the other, and they would have the mother coming back to them.

Q. Now, Doctor, I want to ask you about the nutritional value of this product. You read from a book here this morning—I think Dr. Jamieson's—in which it says the absorbability or the calorie value were practically the same in the various vegetable oils. A. I think it was both.

Q. Out of the same book of Dr. Jamieson's? A. Yes, sir.

Q. Is that the only nutritional value of a food, the calorie value and the digestibility? A. Just how do you mean that?

Q. Are there any other matters to be considered from the standpoint of nutrition when you are giving a food to a child or an adult either, beside calorie value and absorbability? A. There are other things, such as I have mentioned, the fact of the butterfat, for instance, where they are definitely irritating. We don't want a food that is going to irritate them, so that is one thing that we have to consider.

Q. Well, is calorie value or absorbability the full measure of nutritive value? A. No.

Q. You have mentioned that some things had tendency toward irritability. Is there any other element you would consider besides that, irritability, calorie value, absorbability? A. If you want to go further, for instance, the accessory food factors, namely, A and D in considerable fats would have to be considered also.

Q. I am speaking of the fats themselves, exclusive of the vitamins. Let's leave that out of this present discussion. A. I don't know what other factor you are looking for.

Q. Well, are there any? I am asking you. You are the doctor? A. Well, I might say this, there are other factors that will influence the absorbability.

Q. What are they? A. Melting point, for instance.

Q. What else? A. The length of the fatty acid chain also.

Q. In what respect? A. The shorter chains are absorbed more readily.

Q. Anything else with regard to the fatty acids? A. I don't think of anything right now.

Q. Do you know what phospholipins are? A. Yes.

Q. What purposes they serve? A. Yes.

Q. What is it? A. Your phospholipins are not true fats. They are similar to fats and they are necessary in human nutrition.

Q. In what respect? A. They are used in nervous tissue, for instance, in your nerve sheaths.

Q. They are used in building all body tissue? A. Yes, they are, but more especially the nerve.

Q. They are found in the fat fraction, are they not, of butterfat? A. No, most of your phospholipins will stay in the skimmed milk.

Q. They will? A. Yes.

Q. If they are not found in the skimmed milk, then they won't be in this particular product, will they? A. If they were not found in the skimmed milk they would not be.

Q. I thought you said they were, a while ago, a part of the fat, although— A. (Interrupting) I said they are not true fats.

Q. But aren't they part of the fat itself? We will put it this way: When you take cream off, take off the

butterfat of milk, isn't it still contained with that fraction of the whole milk? A. No, it isn't.

Q. Well, does cottonseed oil contain phospholipins?

A. No.

Q. But whatever there is in buttermilk doesn't get into the defendant's product here, whatever nutritional value there is there? A. That is right.

Q. Would you say that all vegetable oils are—I believe you did say that all vegetable oils are of equal nutritional value? A. No, I didn't say that. I say they were approximately equal, but I said that cocoa butter was the lowest in absorbability and the coconut the highest.

Q. The main element you consider as the nutritional value is absorbability and calorie value? A. I think that is the main element.

Q. Would you say that these various vegetable oils could be used interchangeably with skimmed milk and vitamins in producing a product such as the Carolene Company's product here? A. To a certain extent they could, yes.

Q. Would the difference between the one vegetable oil and the other be significant enough that you would recommend one and wouldn't recommend the other? A. Well, there is enough difference, for instance, in cocoa butter and coconut oil that I would certainly prefer coconut.

Q. With regard to corn oil, soybean oil, cottonseed oil, coconut oil? A. Those are so close together that there would be no material difference.

Q. Doctor, each one of these oils just named and butterfat all contain fatty acids, do they not? A. Surely.

Q. The quantity and percentage of the fatty acids in each one vary, do they not, as compared with the fatty acids as contained in butterfat? A. Yes.

Q. Let me ask you with regard to butterfat, what are the constituents of butterfat? A. Well, it is constituted entirely of fatty acids.

Q. Anything else? A. I am not sure I get what you are driving at.

Q. Well, you said it consists entirely of fatty acids, and I am asking you if there is anything else but fatty acids? A. That is, if I buy some butterfat on the market, what all is in it, that is what you mean?

Q. I am speaking of a true butterfat, not water or salt that might be added. I am speaking of butterfat. A. Chemically pure butterfat will have nothing but fatty acids in it.

Q. Will you tell me what fatty acids, if any, are essential to life, either plant or animal life, if you know?

A. I could find those very readily for you. I don't remember off-hand which fatty acids.

Q. Do you know whether cottonseed oil contains them or not? A. My impression is that it does.

Q. Well, you are not now saying whether it does or doesn't? A. No, I am not.

Q. Doctor, do you know if all of the nutrients of milk, including all of the minerals and vitamins, are also in this Carolene product? A. There will at least be small portions of all of them.

Q. You don't know how much or which ones are not?

A. I say, there will be small portions of all of them. There are none that are in the whole milk but what there will be some in this product.

Q. Well, Doctor, you have just stated that there is a small proportion of all of these vitamins and nutrients in this product there was in milk but you don't know how much. Now, how can you make the statement that the product is equally good, in nutritional value, to the whole milk? A. Of the ones it does not contain in any large amount, they are immaterial to the nutrition of infants.

Q. Which ones? A. Vitamins, for instance vitamin E is of no importance to the nutrition of an infant nor is vitamin K. I mean from that source. The reason I say that is because they will produce their own vitamin K. They don't need to rely on an outside source for their vitamin K.

Q. You mean a child will produce its own vitamin K? A. Yes, sir" (T. 606, 607, 608, 609, 610, 611, 612, and 613).

That vitamin E is unimportant to an infant, that its purpose is to insure fertility; that it is also used to treat certain diseases; that there is no disease due to the lack of vitamin E that would affect an infant; that hemorrhagic disease in the infant is caused by the lack of vitamin K, but that vitamin K is produced by the infant and is also supplied by the mother (T. 613). A hemorrhagic disease in infants occurs within the first few days before they have had an opportunity to produce their own vitamin K. It occurs only where vitamin K has not been supplied in sufficient quantities by the mother; that you can't prevent the occurrence of the disease by the use of cow's milk, because the infant of that age can't take sufficient whole milk to get sufficient vitamin K (T. 614). That the witness had read a lot on vitamin K.

That in saying that skim milk had two-thirds the nutritive value, and one-third was in the cream, he was speaking of the calorie value; that 100 c.c.'s of skim milk will have 40 calories, whereas, 100 c.c.'s of whole milk will have 60; that the percentage of protein nutritives would vary with every specimen of skim milk, because the same amount of cream is not left in every case (T. 614). That the witness couldn't say that every vitamin is as important as another; that there are some vitamins that do not matter with an infant; that he does not have to have vitamin E, but he does have to have vitamins A and D and must have it in certain minimum quantities (T. 615).

That there has been a great deal of knowledge obtained about nutrition of infants within the last 10 or 15 years (T. 615-616); that work on fats had been done as early as 1915 when S. M. A. was first produced, and that that food is still considered as good today as when first produced, in fact, it is probably more highly considered today (T. 616).

That he did not recommend Milnot to be substituted in place of mother's milk where mother's milk could be obtained, and the child could take it (T. 617); that ordinarily they preferred mother's milk, because that was the food that had been provided for that particular child although sometimes that child could not take its own mother's milk (T. 617).

Q. Would you recommend this product be used throughout the United States in the place of cow's milk for all infants where the child is not on mother's milk and there is no intolerance against the cow's milk as to the

particular child? A. There certainly would be no objection to such a replacement.

Q. I am asking if you would recommend it. A. Well, in other words, am I to recommend that we upset the entire canned milk industry?

Q. No, I am not asking you that. A. That is what would happen if in every case this product was used instead of evaporated milk.

Q. Don't a lot of children use whole milk that is sold to them? A. Or whole milk, either one.

Q. From the dairymen? I am talking about whole milk. A. Well, you would have an economic upheaval if that was suddenly done.

Q. I don't care about the economic upheaval. I am asking if you would recommend it or not. A. As for its efficiency as a nutritional element, I would.

Q. On what basis? A. On the ones I have recommended heretofore. In other words, it is a wholesome food itself in nutritional value. It is a food that is better tolerated than is either whole milk dilution or whole evaporated milk dilution and it has also the advantage of having the required content of vitamin A and D.

Q. Is there an insufficient amount of vitamin A and D in ordinary cow's milk for the infant? A. There very definitely is.

Q. An insufficient amount? A. Yes.

Q. How about evaporated milk? A. Also that.

Q. Both of them? A. Yes.

Q. Do you say that this product is equal to whole cow's milk in nutritional value? A. Yes" (T. 617-618).

HAROLD T. CLARK.

(T. 639-642.)

Direct Examination.

Harold T. Clark, an assistant drug buyer and stock clerk for the Fox-Vliet Drug Company, Wichita, Kansas, wholesale druggists, testified that this company handles proprietary baby foods, Olac, S. M. A., and Similac; that they had been handling them for years (T. 639); that they serve approximately 500 retail drug stores throughout the entire territory, at present selling more Similac than other brands; Similac retails anywhere from ninety-five cents to \$1.25 a can, S. M. A. powder sold at about the same price; S. M. A. Liquid sold wholesale at \$3 a dozen (T. 640); powdered S. M. A. at \$10 a dozen, Olac for \$9 a dozen. In addition to these Mead Johnson made a lactic acid milk used for babies' food and a protein milk, and another one called Dextri-Maltose, all handled through his store; they did not handle Page's Special Evaporated Milk, but did handle Ovaltine which was sold generally throughout drug stores in Kansas and was also sold in grocery stores (T. 641).

The label from a can of Ovaltine, a product containing malt, whole milk, defatted milk, eggs, cocoa, vitamin A, vitamin B1 and vitamin D, and recommended for children, convalescents, elderly people, expectant and nursing mothers, was read by counsel (T. 642).

That the Mead Johnson products, Similac and S. M. A., had been in use and sold in Kansas for several years (T. 642).

DR. LUCIUS E. ECKLES.

(T. 643-664.)

Direct Examination.

Dr. Lucius E. Eckles testified that he lived in Topeka, Kansas, was engaged in the medical profession and specialized in pediatrics.

With reference to his qualifications he stated:

"I received an A. B. Degree from the University of Kansas, 1927, and an M. D. Degree from Harvard University in 1931. I was a student assistant in bacteriology 1926, 1927, at the University of Kansas. I was with the Children's Hospital, Boston, Massachusetts, from 1931 to 1933. It was really 1930. I got out early. And I was at the Children's Hospital, a resident in bacteriology, intern, resident physician in Infants' and Children's Hospital, assistant pediatrics instructor at Harvard Medical School in 1932, 1933, 1934, and 1935. I have been in private practice from 1935 to the present time. I am assistant editor of the State Medical Journal, a member of the State Medical Society, American Board of Pediatricians and American Medical Association" (T. 643).

That he also had an exchange residence at Johns Hopkins in 1934 where he had intimate contact with Dr. Holt and his work; that he also specialized in pediatrics at that time (T. 643); that he began his private practice in Topeka in 1935, and had been actively engaged in the practice of his profession since that time; that he had studied the problem of human nutrition including the feeding of infants, which was the job of pediatrician; that he had studied authorities and kept in touch with the latest literature on the science of infant feeding; that he had obtained information independent of his own per-

sonal experience from personal contact with men in the field of infant nutrition, medical meetings, society meetings and literature; that his studies and experience in nutrition included a study of the nutritional aspect of animal and vegetable fats and oils; that in studying different kinds of baby foods you necessarily have a clinical study at least of the various aspects of fats and oils; that his studies of the nutritional aspects of animal and vegetable fats and oils had extended over the period of his preparatory work and since (T. 644).

That from his study and experience he had become acquainted with the state of scientific knowledge concerning the edibility of pure refined cottonseed oil as a food for humans, and in his opinion its use as a food for humans was not injurious to the public health; that in his opinion it was an edible fat for human consumption. (T. 645).

Q. How does pure refined cottonseed oil compare in digestibility with other animal and vegetable fats? A. It is very comparable and better than many.

Q. Doctor, what is the difference between information or experience acquired by research and experience acquired by clinical practice? A. Well, I would qualify that. I assume that you are referring to experience from research in basic science as compared to experience from research in clinical practice of medicine. Medicine of necessity involves a great many practicalities of the basic sciences and it is not a man's capability in his lifetime to be able to comprehensively encompass all of the basic sciences and do research in each, and those men most interested in chemistry or physiological chemistry, physicians, stay in their particular field and much of their

was very detailed work on one particular phase of a . . . When that work is published, it may apply directly to something that has to do with, we will say, infant nutrition because that is my particular line, and then that phase of work is applied if it is indicated to, we will say the use of certain infant foods or in the field of infant nutrition. That is what is known as 'clinical research.' Many times the clinical research bears out in many fold the contentions or the hopes of the laboratory research man, basic research man, and other times it tends to refute his conclusions. There are many examples of such work. * * *

The witness testified that the product in question was a wholesome, nutritious and useful food for infants, and he knew of no opinion to the contrary. The testimony of the witness, both on direct and cross examination, was substantially the same as that of the other pediatricians called by the defendants.

DR. A. J. BRIER.

(T. 664-681.)

Direct Examination.

Dr. A. J. Brier, a physician of Topeka, Kansas, a graduate of St. Louis University, specializing in internal medicine and allergy and with many years experience in the practice, testified as follows with reference to the respondent's product being used as a baby food:

The witness testified that the product described in the Agreed Statement of Facts is a wholesome, nutritious food for adults, children, and infants (T. 672). That the products Milnot and Carolene, as used in the feeding of humans, in some ways would be definitely better than

whole evaporated milk, because it has a constant vitamin A and D content; that its sale would cause no more injury to the public health, because it might be fed or used by someone thinking it was evaporated milk, than evaporated milk itself; that he was acquainted with proprietary baby foods and with S. M. A.; that S. M. A. had been on the market ever since he had been practicing medicine (1926) (T. 672); that it was generally used by physicians and pediatricians in the feeding of children ever since before he started the practice of medicine and is generally accepted today by physicians as a wholesome, nutritious food for infant feeding; that there have been a great many other foods that have been processed or developed along the same line, and he knows of no recognized, reputable or competent authority holding to the effect that the use of S. M. A. in the feeding of infants is improper (T. 673).

Cross Examination.

The witness testified that the nutritional value of the product Milnot is just as good as that of whole milk or evaporated whole milk, and in some ways is better because evaporated whole milk, unless it is fortified with the A and D vitamins, isn't standard; that excluding vitamin A and D in both products, he would still say it was equal to whole milk (T. 673-674). That when milk is skimmed some of the skim milk goes with the butter; that all the vitamins which are found in skim milk will be found in the milk left regardless of how much skim milk is taken off the cream (T. 677). That all of the vitamins which appear in milk other than the butter fat are in this product (T. 678). That there is a difference between butter fat and cream; that cream contains some

skim milk, but if the butter fat alone were taken out of the milk no other essentials would be removed from the cream (T. 679). That the sale of skim milk is an economic form of getting nutrition in the food and diet of individuals, but whether or not it is economical depends on the method of marketing (T. 678).

DR. OSCAR FRANKLIN BRADFORD.

(T. 690-732.)

Direct Examination.

Dr. Bradford testified that he was a physician, specializing in pediatrics, living and practicing in Columbia, Missouri. With reference to his qualifications, he stated:

"Well, I had my common school work in Missouri, A. B. at the University of Missouri, in 1912, graduated from Washington University Medical School in 1915. I had two years of student internship and one year of internship at the St. Louis Children's Hospital. I was resident pathologist at the Barnes Hospital in St. Louis, and following that I was resident pediatrician to the St. Louis Children's Hospital. Then I taught pathology in Washington University, bacteriology in Washington University Medical School. I was instructor and head of the department in the University of Missouri, taught preventative medicine, hygiene and medical bacteriology. Then I was in the army; during that time I was in the laboratory division for the War Department and had service at Rockefeller Institute, Army Medical School, and was chief of the base hospital laboratory at Camp Houstus, Virginia. Following that I was instructor in pediatrics in the University of Kansas Medical School, taught two years pediatrics to the juniors and seniors. Then I went into private practice

and since that I have practiced pediatrics in Kansas City and then I was State Pediatrician for the State of Missouri, gave two years of post-graduate lectures to the doctors in the State of Missouri on Children's diseases, and following that I have been practicing in Columbia and teaching child hygiene, and I have charge of the contagious service in Stephens College in Columbia at the present time" (T. 691).

That he is engaged in private practice in Columbia, specializing in children's diseases; that he began to study infant nutrition in 1913 and has been on it ever since; and that in his practice his study included the study of the problem of feeding of infants and children which with the study of children's diseases constituted the principal parts of the pediatrician's study. That he had kept up with the authorities and literature on the science of infant feeding (T. 691). That in addition to his independent personal experience, the best source of information is the medical journals in the field in which the doctor is interested, including the latest books on pediatrics, and in addition to these, in America there are three journals or publications considered as authorities, The Journal of Pediatrics, the Journal of American Diseases of Children and the Archives of Pediatrics.

That his study and experience in nutrition included a study of the nutritional aspects of animal and vegetable fats and oils; that they were one of the biggest problems in pediatrics when he started in it; that it was a problem consisting of bacteria in milk and, second, that other animal milk was not adjustable to infants, on account of the fats, to the infant nutrition (T. 692).

That from his study and experience he had become acquainted with the state of scientific knowledge concerning the edibility of pure refined cottonseed oil for food for humans; that in his opinion its use is not injurious to the public health, and it is an edible fat for human consumption; that it is equal to all other animal and vegetable fats in edibility and superior to cocoa butter (T. 693).

"Q. What is the difference between information or experience acquired by research and experience acquired by clinical practice? A. Well, one is initiated and the other is the mature product. We all through the highly enlightened branch, or one of the highly enlightened branches of medicine, usually obtain or discover facts—not 'obtain'; they are all here. It is a matter of discovering certain chemicals or certain facts medically, and this we done through the research division of the medical profession. That is the job of the chemist and the physiologist and the pathologist, and what not. Then when we have a fact—and there are many of them that never fit into use in medicine any more than they would in the cotton industry or in farming—when we have a fact we feel meets a problem, then we have to try it out. Usually we do it on animals, but if it is obviously harmless as H_2O , water, we go ahead and feed it to children the same or to people the same. We have to use our judgment, but if our judgment or if our experience shows that this is not desirable or if it is harmful, we stop" (T. 694).

That in the practice of his profession he had had experience in the clinical problem of feeding as well as access to the research results; that in the final analysis of the acceptance of a food the determination of its usefulness as a human food rests with the physician, also in

the patient's ability to use the food; if the doctor sees that the food is beneficial, then it is a successful attempt or trial or a successful usage of a thing, and if he sees it is harmful in the final analysis, it depends on the effect it has on the individual upon whom the food is used; that the physician's approval is usually the factor that determines the acceptance by the public of the food—the public usually considers the physician's judgment on that matter (T. 694); that in the case of an infant food the usefulness of the food rests more particularly with the pediatrician.

That there is a difference in the nutritive value of the various refined edible vegetable oils, such as corn oil, cottonseed oil, soybean oil, cacao butter and other vegetable oils; that cacao butter is less absorbent, as such, in actual feeding, and is less nutritious, but all are about 90% absorbed as to the fat element.

That some of the scientists recognized by the medical profession as the authorities upon the question of the nutritive value of vegetable fats are Dr. Jamieson, who is perhaps as much as an authority as anyone, and in the clinical field there are several, Dr. Holt and Dr. Jeans, Dr. Marriott, who is now dead, and Dr. Hess of Chicago, who years ago did a great deal of work on animal fats and vegetable fats in feeding. That there is no recognized, reputable or competent authority holding to the proposition that the use of pure refined cottonseed oil as a food for human consumption is injurious to health (T. 695).

Q. Does any difference of opinion exist in the field of science regarding the nutritional qualities of cotton seed oil and its effect upon health when used as a food

for human consumption? A. I know of no difference in the field of science and in the field of clinical medicine. I am sure there is no difference among the leading men of the profession.

Q. Have you learned of any history of injury to the public health from use of pure refined cottonseed oil as a fat for human consumption? A. No, sir.

Q. Are you acquainted with the composition of cow's milk? A. Yes, sir.

Q. Of what is cow's milk composed? A. Well 87% of cow's milk is water. There is protein in it in about 3 1/2%. That varies with the cow and the breed. There is fat in it about 4 1/2% to 4.6%, or carbohydrate in 4.6% and there is fat that varies from under 3% to over 6%, but the mean is about 3.75%. Then we have about .75% ash and a very negligible quantity of vitamins.

Q. What are the vitamins found in cow's milk, the principal ones? A. The only one of any importance whatever is A vitamin, which under ideal feeding, summer feeding conditions in which the cow gets plenty of leafy green vegetable and plenty of yeast to go with it, she is capable of producing about, I would say, two-thirds, if the child drinks a quart of milk a day, I would say between a half and two-thirds of the amount of A required by that child. The D vitamin is so small we don't pay any attention to it in the milk. We used to. We don't any more. B vitamin is the one, the B complex, the water soluble vitamin that perhaps is there in 50% efficiency, provided we feed the milk fresh and it hasn't had time to oxidize or to be destroyed by heat and by bacterial action, and what not.

Q. When milk is allowed to stand so that the cream, as we used to put it on the farm, rises and separates, what portion of the food value of the whole milk is found in the skimmed milk? A. Calorically speaking, that varies with the milk. Milk is so variable in all its elements that the caloric value is not stable or average except in extremely large pooling of milk. In Kansas City, for instance, one of the big dairies decided to make a milk, and we found that it required 500 or more cattle to put us a stable milk on the market chemically because we had it analyzed. The dairy went to the trouble to have it analyzed and if we got 500 cows or more in one brand of milk, then we felt we had a very fairly stable milk. But the accepted figure on that is that about half or a little more of the nutritive value as food is in the skimmed milk, possibly a little more. I would say 60% from my own personal experience" (T. 697).

That about 40% of the food value of milk is found in the butterfat; that when cream is separated from milk what is left in the skimmed milk in food value other than fat is called solids, and they are important for human nutrition (T. 697).

Q. What food factors are found in the skimmed milk solids? A. The chief things are the albumins and the casein which altogether go under the general heading of proteins. In the skimmed milk, we really use skimmed milk for the protein, whether we are feeding to infants or whether we are feeding it to hogs. It is all the same.

Q. Are the solids not fat in the skimmed milk an economical source of food for humans? A. It is one of the leading forces at the present time.

Q. Do you consider a wider consumption of skimmed milk necessary to improve the conditions of diet in the United States? A. Yes, it is acute, I would say, in the United States at the present time.

Q. Is this view generally recognized by others in the field of nutrition? A. Yes, sir.

Q. Are you acquainted generally with the sources, utilization and nutritional qualities of the generally recognized vitamins? A. Yes, the principal ones. I am not acquainted with all of the chemical substances that have been given names in vitamins.

Q. I believe you stated that the principal useful vitamin, essential vitamin found in cow's milk, is Vitamin A? A. That is the one that we can always depend on having a fair amount.

Q. But the other vitamins? A. Are variable and very slight.

Q. Generally speaking, into what classes would you divide the vitamins found in milk? A. Vitamin A and Vitamin D and Vitamin E and K are oil-soluble. Vitamin B with its components, as far as we know, are water soluble.

Q. Well, when the cream is taken from milk, where are the water-soluble vitamins left? A. The water-soluble vitamins on the whole are left in the skimmed milk. There are some of them in what we call 'top milk' or cream because there is some skimmed milk taken off and some watery substance taken off with the cream.

Q. In other words, cream is the— A. (Interrupting) A mixture of the butterfat and the skimmed milk.

Q. What are the functions of these water-soluble vitamins in human nutrition? A. The B complex, for

the most part, have to do with protein phases of nutrition. They have to do with growth. They have to do with the handling of the protein in the diet and they have particularly to do, in children at least—I am not familiar in animals as I should be, perhaps—but in children, children who lack Vitamin B are always in my experience anemic. That means as long as we build blood from the protein element that it has something to do with the production of protein products or the production in the body derived from protein in the food as evidenced by the development of blood elements. Children who are deficient in B Vitamin are always anemic and, usually they have nervous symptoms that indicate that it has to do with the nerve tissue also.

Q. So that the protein elements are found in the skimmed milk? A. Yes, sir.

Q. And the B Vitamins are necessary to help make proper utilization of the skimmed milk when taken into the body? A. That is right.

Q. And they are the water-soluble vitamins that go with the skimmed milk? A. Yes, sir.

Q. Now, the fat-soluble vitamins, what is the function of those? A. A Vitamin is not entirely understood as well as D at the present time, but we do know that A Vitamin has to do with the skin, its proper health, and with the certain parts of the eye. In other words, xerophthalmia, a type of blindness which is almost totally permanent in the extreme deficiency, has occurred from deficiencies in A Vitamin. It is a growth vitamin, but they all are, except K and possibly K, that is, the known K.

Q. What is the function of D? A. D is, in the common expression of Doctors, the antirachitic vitamin. It has to do with the metabolism of phosphorus and calcium, and, we are fairly certain, to some extent with the metabolism of iron. They are the principal chemicals that are involved in the common disease known as rickets—I mean not the prime but they are the principal known factors involved in the production of rickets in children.

Q. What is the function of the E Vitamin? A. E Vitamin has to do with growth. Just the last few months some of us have thought that maybe it has a little to do with lactation in the human being. It favors favorable lactation, but it is primarily the reproductive vitamin. It affects sterility of a species or an individual more than the other vitamins do.

Q. What is the function of Vitamin K? A. Vitamin K is the so-called antihemorrhagic vitamin. It to a certain extent is oil-soluble and there are two phases of it. The oil soluble phase depends on the bile salts for splitting and for absorption. The water-soluble K is in the plants and we probably get a great portion of it out of the leafy plants that we eat. It is not of extreme importance except in certain phases of disease in individuals. It is more important, we feel, in the feeding of pregnant mothers during the last few months of gestation than any other place in medicine that is so far known.

Q. In the case of a young infant is it important or necessary? A. The young infant, I would say the infant under five days old, it becomes of importance when given or injected in its pure form in the prevention of a few of the fatal hemorrhages of the newborn. It does not affect the hemorrhages due to injury. It affects the ones that are due to chemical causes.

Q. After the infant is four or five days of age, what about it? A. We all are capable of manufacturing K Vitamins in our own intestinal tracts providing we have lived long enough to have some putrefaction there. In other words, it is probably manufactured—and I say 'probably' because I am not certain and I doubt if anyone is—manufactured there as part of the water-soluble factor of K Vitamin.

Q. The, as I understand it, K Vitamin is both a fat and water-soluble vitamin? A. There are partitions of it, one of which is water-soluble.

Q. In the case of an infant under five days of age where you have to inject the K, what form is it in, the fat-soluble or water-soluble form? A. When we inject it, it is usually suspended, always has to be suspended in the water. When we feed it by mouth, usually the fat-soluble one is used and we need not worry about the bile salts being there because the infant, except in deformed cases, always has plenty of bile in his intestinal tract to handle the K we give him by mouth.

Q. Doctor, expressed in the terms of standard units, within what range does the Vitamin A content of a quart of whole milk vary? A. From reading experience, I would say that the variance is from 40 or 50 units up to 2,000 or 3,000 units.

Q. It is a wide variation? A. Yes, sir.

Q. Depending upon what factors? A. Depending on the type of diet the particular cow has eaten and the particular amount of fat that this individual cow will produce in her milk. There are two factors; one is the availability of carrying power and the other is the availability of the proper A in the diet.

Q. Expressed in terms of standard units within what range does the Vitamin D content of a quart of whole milk vary? A. I would say it varies from 5 to 10 units up to 40 or 50, 50 or 60 units.

Q. There again does the variation depend upon the type of animal producing the milk, the feed that it receives? A. Yes, sir; that is distinctly shown by feeding of certain yeast foods and acid silo foods and silage to cattle during winter months. I mean we can produce a higher D by that than we could formerly with the average winter food.

Q. Enumerate some of the prime sources of the fat-soluble Vitamins A and D? Where do we get them, principally? A. Our chief source at the present time is fish liver oils. For instance, the convenient source for the pediatrician is cod liver oil because it has from eight to ten times the amount of A than it has D in it, and given in its refined natural state it has a right proportion and we don't have to worry about producing blindness on one hand or having rickets on the other because if we add a teaspoon of it to the diet the bones form. That is the convenient form in which physicians use it" (702).

That it is now possible to fortify fat bearing foods with high potency vitamins A and D secured from natural sources such as fish livers, and that the vitamins thus supplied are equal in nutritional qualities to vitamins supplied through butterfat or other sources; that it is now a common practice to fortify whole milk and evaporated whole milk by addition of the fat soluble vitamins A and D; that they have vitamin D milk which you can buy at the dairy, in which there is added cod liver oil concentrate to the amount to 2,000 units of A and 400 units of D (T. 702).

That the witness was acquainted with Page Evaporated Milk, and that it is fortified with vitamins A and D from fish liver oil concentrate.

That skimmed milk by itself is a pure nutritious food and can be mixed in a food with pure refined cottonseed oil without injury to the nutritive properties of either or the combination of the two.

That oleomargarine is usually made of a combination of vegetable and animal fats together with skim milk; that it has been sold in this country certainly since 1904; that since they had obtained the knowledge of the lack of vitamins in the vegetable oils, and that deficiency was met in the margarine, since then there have been no harmful effects (T. 703).

That there is no reputable, recognized or competent authority to the effect that the mixture of pure skim milk and cottonseed oil would render either pure skim milk or cottonseed oil or the combination of the two harmful for the use of humans; that malnutrition exists in the United States (T. 704).

Q. By what is malnutrition caused? A. There are always two factors to an individual's reaction to his surroundings. In the nutritional field, his nutrition depends upon the quality, quantity of foods obtainable and his ability to handle that particular quantity and quality. Now, malnutrition in young infants is largely due to some diseased condition or to starvation. That is higher in America than the average individual believes and in older individuals it is frequently due to disease and improper food as well; so I would say that malnutrition is a state of health of the individual in which his weight and his general health are not up to normal.

Q. And that lack of normal condition is due, as I understand you then, either to the lack of food or lack of proper combinations of foods? A. Or lack of ability on the patient's part to absorb that food and properly handle the diseased condition.

Q. Is a greater utilization of skim milk as a food for human consumption involved in any plan or program to reduce malnutrition in the United States? A. Yes, there has been a movement on hand for several years, six years that I am acquainted with, in which the Children's Bureau and the Agricultural Department are very much interested in increasing the protein intake through the skim milk, especially in children (T. 705).

* * * * *

Q. Doctor, please compare pure refined hydrogenated cottonseed oil and butterfat with respect to edibility, digestibility and nutritive value where used as a food for humans. In doing this, assume that the melting point of the hydrogenated cottonseed oil is below 50 and the iodine number is below 69.7. A. In actual feeding experience there would be no difference in the absorbability or the food value of this particular vegetable oil.

Q. Is there any difference of opinion in the field of science regarding the conclusions you have reached in answer to the foregoing question? A. There might be a little, but usually they are without the facility or the experience of a clinical actual feeding of the two. One man might be used to one oil and say it was more digestible than the other, and the other individual might be used to the other. I think the men who have used both interchangeably will say exactly as I have said, that there is no clinical difference except in disease.

Q. My question was comparing butterfat and hydrogenated cottonseed oil, not one oil with another. A. Well, that is butterfat and cottonseed oil. One is an animal fat and the other is a vegetable fat" (T. 706).

That from his study and experience he had become acquainted with the use of refined cottonseed oil as a food for human consumption.

"A. Well, it is equally as good as animal fat and, in some instances I have used it to take the place of animal fat where that individual did not handle, for instance, the butterfat as he should; and in those instances it is obviously of much better use than the other fat" (T. 706).

That cottonseed oil has been used in this country for over 50 years; that after the development of the hydrogenation process, its use had become more general. "It is a better fat due to the raising or lowering of the melting point and it is more usable because especially children will eat it better. They like it." The process of refinement has made it more palatable and more useful.

That there is no evidence of injury to the public health through the use of pure refined cottonseed oil as a food for human consumption.

That pediatricians in infant feeding do not use evaporated whole cow's milk or the whole cow's milk as the sole diet without modification or addition of other substances, nor do they feed fresh, whole milk without modification (T. 707).

"Q. In the feeding of infants how would the product under consideration compare with evaporated whole milk as to its wholesomeness and nutritiousness and usefulness? A. It is as good or better.

Q. Why would you say it is better? A. Well, in diseased conditions in which the volatile acids play an important part in the absorption, the cottonseed oil would be better absorbed. In other words, a sick child would handle this milk better than he would the other milk.

Q. What about the child of normal health, would it handle it equally as well? A. He would handle it equally as well, and with the allowance for that minor favorable side, he would handle it a little better but not enough to be clinically distinguishable.

Q. Is there any recognized reputable or competent authority holding to the proposition that the use of a compound of pure refined cottonseed oil and evaporated skim milk fortified with 2,000 U. S. P. units of Vitamin A, and 400 U. S. P. units of Vitamin D from natural sources in each 14 1/2 ounce can as a food for infants, is injurious? A. There is no authority for that.

Q. There is no authority holding it to be injurious? A. That is right.

Q. Doctor, what is the effect of homogenization of this product upon the fat content of the product and the digestibility of the product? A. The homogenization is a process in which milk is forced through a jet by which from 500 pounds to 2,000 to 4,000 pounds pressure is applied. This breaks up the fat particles and in the instance of butterfat, for instance, it makes the globules about one-sixth their original size. With the vegetable oils it reduces them materially, but it doesn't make the big difference because of the original difference. They were a little finer to begin with.

Q. That is, the vegetable oil globules were finer than butterfat? A. Yes, sir, but in butterfat, the fair com-

parison is one-sixth the original size of the globules in homogenized milk.

Q. What effect does that have upon the digestibility?

A. It has its principal effect upon the digestibility of the protein. Strange to say, we did this in order to make a more digestible fat and it does improve the digestibility of the fat, but the big improvement comes in the body's ability to handle the proteins in such milk, and, after all, the protein is what we want out of the milk in infant feeding.

Q. What are the relative merits of cottonseed oil, soybean oil, peanut oil, corn oil and cacao butter as a food for humans? A. They are about equal. As previously stated, cocoa butter is less absorbable than the others, which are around 95 to 98% absorbable.

Q. What is the relative value of pure, refined hydrogenated cottonseed oil fortified with Vitamins A and D from natural sources in comparable quantities and butterfat as a human food? A. It would be practically the same. You mean what is the nutritive value? I didn't get the question.

Q. Well, I will put it as a human food. A. Read that again, please.

Q. What is the relative value as a human food of butterfat and pure refined hydrogenated cottonseed fortified with Vitamins A and D from natural sources in comparable quantities? What I mean to say there is— A. (Interrupting) They are equal.

Q. Assuming that they have exactly the same Vitamin A and D content to a pound, how would each pound compare with the other in food value? A. Equal.

Q. Does butterfat used in infant nutrition contain any irritating factors not found in the refined edible vegetable oils? A. Yes.

Q. What are they? A. They are the volatile fats, the chief one of which is butyric acid.

Q. What is the effect of that? A. Well, particularly in malnutrition condition or in disease where there is a stasis in the bowel, a slowing down of the movement and the function, these fats have time to actually produce enough irritation to produce vomiting and diarrhea, which in turn are the most grave symptoms that we have developing in this sick child. I mean that throws our body chemistry off. In other words, we have to take the cream out of the milk when the child is sick if we want to assure this individual of a fair treatment medically.

Q. Doctor, what is the state of opinion among pediatricians, physicians, nutritionists and dieticians concerning the safety of the use of pure refined cottonseed oil in infant and adult foods in combination with pure sweet skimmed evaporated milk and pure natural source Vitamins A and D from fish liver oils as contained in the product involved in this case? A. The opinion is that it is a wholesome and safe food.

Q. Would you consider such product safe for the consuming public? A. Yes, sir.

Q. Is there any difference of opinion among the scientists as to its being safe? A. No, sir" (T. 710).

The witness testified that the product described in the agreed statement of facts is a wholesome, nutritious, and useful food for adults, children and infants (T. 712).

Q. As a food, in your opinion how does it compare with evaporated whole milk? A. As a food it is better

than the average evaporated whole milk because it is in its present state a little more concentrated. It has a fat which is more useful in infant feeding, we will say, than other foods. It has, with the very few exceptions, a higher concentration of Vitamins A and D. I think personally I feel that makes it a food above the average of evaporated whole milk.

Q. Now, in speaking of it being above the average in vitamin content, do you also consider that it is constant in its vitamin content as disclosed by the agreed statement of facts? A. That is right, and this is one, the only one that I have seen that is constant, I mean.

Q. Well, is that constant (indicating Page's Evaporated Milk)? They add so much? A. No, well—

Q. (Interrupting). You are referring to Page's? A. Yes, the Page milk. They add, roughly speaking, about the same amount. The variability there would be the variability of A and D in the cream, in the milk, which would be slight.

Q. But there could be some variability there? A. There could be an inferiority in this product over the other product. By that I meant this Page product" (T. 713).

That his profession generally recognizes processed foods of this nature as being wholesome nutritious foods for the feeding of infants; that before these foods were processed many of his children had eaten the margarines; that of these specialized foods, there were Similac and S. M. A. That S. M. A. has been available since 1915, and Similac has come out in the last few years. That in his practice he used these foods, and used Similac more than S. M. A. (T. 713).

"Q. Before you were ever consulted with reference to the defendant's product, as a matter of fact, before you ever heard of it, you were a user of similar processed foods of vegetable fat and evaporated skimmed milk or dried skimmed milk? A. Yes, sir, I have used S. M. A. since 1915, not routinely but first experimentally at the St. Louis Children's, then later on when I used it in my own practice.

Q. Doctor, are some of these foods, these processed or proprietary foods approved by the American Medical Association Council of Foods? A. There are several of them approved."

That Sobee put out by Mead Johnson contains no milk, and that Mull-Soy contains no milk (T. 715); that such foods are used temporarily in the feeding of infants until the infant is old enough to get necessary protein that is not in these foods out of such animal protein as beef or lamb or something of that sort in the form of soup. These are adequate temporary foods for infants. That these foods are resorted to if an infant is allergic to milk, and in feeding such an infant it is necessary to provide him with the food elements necessary to promote its growth and protect its health to the same extent as if it was not allergic and you were feeding it milk, and these foods have been found by the profession to be adequate and sufficient until it is old enough to handle other foods than milk (T. 715).

That a person can subsist on such foods other than milk from infancy to old age; many of them live right along without milk; that many of them lived right along without milk outside of the mother's milk in infants. The

Indians did that. That milk is not necessary to the sustenance of human life; that it is not a perfect food.

That he did not consider the sale of Milnot and Carolene could result in injury to the public health because it might be fed to infant children in the place of evaporated whole milk.

That chocolate is a preparation containing as its chief nutrient ingredient, cocoa butter, which is an oil derived from the cocoa bean or cacao bean, and which is a vegetable fat; that it is extensively used in dairy products such as chocolate milk, or chocolate ice cream, chocolate malted milk and products of that sort; that in this country, chocolate drinks are generally sold through school cafeterias (T. 716).

That the oldest of the proprietary foods supposed to be a feeding in itself is S. M. A., using the mixed vegetable oils, which was developed by Dr. Gerstenberger's clinic in Cleveland, Ohio; that he is one of the outstanding men in this country, and because of this fact when S. M. A. came out doctors accepted it on his signature alone; that because of his prominence in his profession doctors accepted it against their own prejudices; and that after he accepted it and used it since 1915, from his own use he had found it to be a wholesome, nutritious food for infants and children (T. 717).

"Q. You say you use Similac. What is the history of Similac? A. Well, Similac is a little different from S. M. A. in that it has only one-fifth of the natural fat left and it has added vegetable oils and some fish oil concentrate and it leaves out the suet that was in S. M. A. and it leaves out the cocoa butter, both of which are irritating to some individuals" * * * (T. 718).

Q. Doctor, would the product under consideration, Milnot, have any advantage over S. M. A. because it contains only one fat and S. M. A. contains several fats? Would it have any advantage as to being less liable hitting intolerances in the child? A. Yes, it is. It is a better food from that standpoint, and taking into consideration that milk is not the entire diet, it is as good a food from the standpoint of covering the field of fat nutrition. In other words, it has all that is necessary in milk because we never feed milk as a sole diet in children. It takes out the irritability and yet supplies what we want in milk.

Q. Doctor, I show you a can of Biolac. Are you familiar with that product? A. Yes, I am."

* * * * *

That Biolac is a proprietary food used for babies, and about one-half the butterfat has been removed; that such products are put on the market because the butterfat has been removed; that most of them are proprietary foods, and are patented, and that they sell for a great deal more than Milnot and Carolene; for instance a 16 ounce can of Biolac sells for 25c. It is a fluid milk. That Similac sells for about \$1 a can or 35c a quart, reconstructed; that a can of Carolene or Milnut reconstructed would make about a quart.

That a formula for infant feeding is the proportions used in the mixture in which we put a certain amount of milk, a certain amount of water or any sugar or other chemical that we want added to this particular twenty-four hour feeding of infants (T. 720). That a formula is used for most any food used outside of breast milk in order to get the proper chemicals; that whole milk or evaporated whole milk is used according to a formula (T. 721).

“Q. What would be some of the things necessary to add if you were using whole raw milk? A. Whole raw cow's milk, the first thing would be sterilization of it by heat to kill disease germs in it. The next thing would be dilution of the milk with sterilized water to make a compatible fatty mixture in the formula, then the addition of some acceptable sugar to bring the already low sugar, and then diluted sugar content, up to about one and a half times the sugar content of natural milk. I mean it is too low for the human baby to thrive on. We have to add sugar to even whole milk to make it an acceptable food in our picture.

Q. Well, do you also add some vitamin-bearing property? A. Vitamin is either put in the milk—most pediatricians leave it out of the formula and give it to them as medicine; then we know they get it. We give the entire requirement for the child and ignore the vitamins present in milk. That is the rule that practically all pediatricians follow. We never consider in actual infant feeding the possibility as to vitamin content.

Q. If you were feeding the ordinary evaporated milk, would you feed that according to a formula also? A. Yes, sir, and I would feed the vitamins too because, of course, if it is this product we have a known amount given.

Q. You mean Page? A. Page or similar, anything where we have a definite amount, then we would make up the difference; but in evaporated milk, unless it were irradiated evaporated milk, we would have such a difference that we couldn't depend on it. Irradiated evaporated we would count 135 units of D and then furnish the rest medically.

Q. And as to A, you would, even in evaporated milk, have to furnish it? A. The wise pediatrician furnished vitamins aside from milk.

Q. Well, if you used Carolene or Milnot in with your formula, would you have a more adequate supply of vitamins than you would using evaporated or whole raw milk? A. Yes, you would.

Q. You wouldn't have to rely so much upon the drug store vitamins then? A. No, and you would have an added advantage in that it has been shown that vitamins given in vegetable oils are about at least 50% more usable than the same amount given in D Vitaminized butterfat. There is something about it that makes that more usable than the butterfat, so that would be an advantage of the Carolene over the other product" (T. 722).

Cross Examination.

On cross examination the witness testified that as he understood the product, Milnot is classed as a proprietary food, such as Similac and S. M. A., and the others. That it could be used in those cases where you would use food to do a certain particular job for a period of time; that he recommended it for that purpose and accordingly used it for that purpose; that on the label of a can of Similac there is a statement that it is to be used only under the advice of a physician, and there is a similar statement on Sobee cans; that Sobee contains no vitamin A, C, or D, which must be supplied in some other way (T. 723). That in Biolac, some butterfat is taken out and some left in; that the only fat, insofar as the doctor knew was butterfat. That it is a special food, and bears the statement "To be used under the direction of a physician." That it was a powder, and that he thought it was necessary for a physician to

figure out a way to use it; that an ordinary person wouldn't know how to make it up (T. 724). That so far as he knew Biolac was sold in drug stores and not in grocery stores, because the manufacturer requested; that it is made for the use of physicians.

That Olac is a powdered milk containing olive oil and skim milk, and each can bears the statement "To be used by a physician"; that Page's Evaporated Milk does not contain vegetable oil but contains cod liver oil concentrate; that it bears no statement that its use is limited to a physician's prescription (T. 725).

Referring to the product in question:

Q. Would you say that the infant would grow, do just as well on it as it would on whole milk? A. Yes, sir.

Q. Would you still say that if the Vitamin A and D content in whole milk and in this product were identical?

A. Yes.

Q. What do you base that statement upon? A. Well, that is based on, as I mentioned a while ago, the fact that homogenized vegetable oils with added fat-soluble vitamins, the vitamin content as shown by Holt in his many experiments on that is greater absorbed than the same amount of vitamin content replaced after the vitamins have been removed from butterfat. In other words, once we get vitamins into a vegetable oil, their efficiency and absorption is better than it is from revitaminized butterfat, and there isn't any question about the accuracy because enough work has been done on that to make it clinically acceptable.

Q. Now, outside of your vitamin question. A. Yes.

Q. I think you made the statement—well, I will put it this way: Then you base your statement that the two

products containing the same amount of A and D, that this product Milnot is better than an equal amount of whole milk containing the same amount of A and D because of this? A. Because of the availability of the fat-soluble vitamin that has been added, I mean in actual nutritional absorption. I am talking about what the patient uses, not what he has put into his bowel and then passed out in form of feces. I mean what he actually takes up.

Q. Now, Doctor, what is the clinical work that you speak of? A. Emmett Holt, Jr., has done considerable work on various phases of the fats. He, like the rest of us, was interested in his younger days in fats, because that was our big problem.

Q. Clinical work then? A. He has actually fed this to children.

Q. To children under control conditions? A. Under control, but, of course, his original work was done on animals (T. 727). * * *

Q. You haven't been doing any experimental work since that time? A. Only clinical, I mean feeding. I have big enough clinics and have had during the last ten years, that my clinical feeding problems could be fairly well worked out. I would say that I average in my private practice seeing 400 new babies a year and with my clinics I have averaged seeing 1,000 new babies a year for over twenty years.

Q. That is in your general practice? A. In my practice and my clinics, where I hold feeding clinics. I have had large feeding clinics.

Q. Your statements here are based upon your general knowledge from your experience and your— A.

(Interrupting) And my knowledge of it, my knowledge of the problems involved through research. I have done no chemical research in the last twenty years.

Q. I believe you state you accept these various products as containing what is in them by reason of your reliance on the research men? A. And the people who put them out.

Q. Referring to the defendant's product, you said it would produce just as good a growth as whole milk. What work has been done on this product by you or anybody else? A. Well, my work is entirely limited to feeding it to children.

Q. You have been feeding it to them for some time? A. Not a long time, but long enough to determine. I have known this product for a few years, two or three years, but I have actually fed it long enough to know that it meets the demands.

Q. What control have you had on feeding it? A. My experience in other children is the only control. I have made no comparative control except when a pediatrician practices medicine and the child comes into his office once a week or once every so often to be weighed and gone over and look for rickets and other things, one's control is very apt to be good because the mother will take that child some place else if something goes wrong.

Q. Doctor, when you are saying that you experiment with a food upon an animal and determine what the various nutritional qualifications of that food are, they do that under very strict control conditions, don't they? A. The originators do, but it is no trick at all for the average doctor who is well up in dietetics to get an acceptable table of contents of a food and be able to work

out in his own mind whether that food will agree and go into a diet that he is about to prescribe, or not. I mean we have to have generalized knowledge well enough to be able to do that.

Q. In other words, you rely upon your general knowledge whether you think the ingredients will do the job? A. And the honesty of the label. We assume that

when an article enters into, for instance, children's feeding, that it has had at least a clinical trial as a food long enough for the harmful things to have been detected.

Q. You mean the various elements that go in to make up the food? A. I don't know how long this has been on the market, but before doctors began to feed it to children I would say it has been on the market some years because that is the usual thing and we didn't feed condensed cow's milk for years.

Q. Assume that this has been on the market for less than a year, do you think that has had sufficient clinical experience to say that it has had sufficient experience to stand up? A. Yes, because its components are cottonseed oil and skimmed milk with added vitamins, both of which we know have been fed in thousands of instances without harm.

Q. Well, that, Doctor, is merely a matter of your opinion based upon your general knowledge and not upon any experimentation or work on this particular product, is it? A. Many of my clinical ideas are a matter of opinion based upon general knowledge. They all have to be or I couldn't practice medicine" (T. 729).

Re-Direct Examination.

On redirect examination the witness testified that a can of evaporated milk bought in Kansas, labeled, "First

Choice Quality Flavor Vitamin D Evaporated Milk," had no instructions on it limiting the product to the use of a physician, and that the ordinary milk bought in bottles does not contain any such instructions (T. 729); that instructions "to be used only under the advice of a physician" has never been put on vitamin D milk.

That a can of Dextrogen, manufactured by Nestle's Milk Products, Inc., New York, and bought in the State of Kansas, contained no caution to use it in infant feeding only upon the advice of a physician.

Q. What is that, Doctor? A. Dextrogen is sweetened milk similar to these other milks that have had sugar added. The sugar added to this is dextrimaltose. It is a mixture of dextrans and maltose. Then, of course, it has the milk sugar that was in the milk when it is condensed in 8%. That is put out by a reputable company and has now been taken over by one of the baby food companies.

Q. It is put out primarily for infant feeding? A. Yes, that is what it is for. It is not put out for general milk distribution.

Q. Look at that. A. This powder Dryco is a powdered milk in which the concentration has been effected by removing the water and it has added up to ten U. S. P. units of D per quart when diluted according to directions.

Q. What does the label show that the preparation is designed to be used for? A. It says, 'Made from a superior quality of milk, from which part of the butterfat has been removed, and then dried by the Just process. The Vitamin D content of Dryco is, before drying, increased by direct irradiation with ultraviolet rays under the U. S. Patent No. 1680818' (T. 731). * * *

Q. (By Mr. Clark) Dryco, according to the label, is to be used for what purpose? A. Infant feeding, invalids and for the aged.

Q. Does that have any caution not to be used except upon the advice of a physician? A. It does not.

Q. This Biolac has a cod liver oil concentrate in it, hasn't it? A. Yes, sir. 'The iron content and the Vitamins A, B1 D values are raised to accepted prophylactic levels by the addition of a concentrate from cod liver oil, crystallin Vitamin B1, and ferric citrate.' (T. 731).

Re-Cross Examination.

On recross examination the witness testified that Dextrose sugar is not a fat and that Dryco does not contain any vegetable oil, insofar as he knew; that it is a condensed milk with the addition of vitamins, but that part of the butterfat has been removed; and in Biolac there are no vegetable oils (T. 732).

DR. PAUL E. BELKNAP.

(T. 769-790.)

Direct Examination.

Dr. Paul E. Belknap testified that he was a physician living in Topeka, Kansas; and that his practice was limited to pediatrics, diseases of infants and children (T. 769). That his study had included the study of the problems of nutrition in the feeding of infants and children, and the largest percentage of a pediatrician's practice is the feeding of children. That he had tried to keep acquainted with the literature on the science of infant feeding and independent of his personal experience he had obtained information from reading medical journals

and the attendance of scientific meetings. That his study and experience included the study of the nutritional aspects of animal and vegetable fats and oils; that his study in this field had extended over a period of 21 years—ever since he took up the practice of pediatrics. That he had become acquainted with the state of scientific knowledge concerning the edibility of pure refined cottonseed oil as food for humans (T. 770).

That in his opinion the use of pure refined cottonseed oil is not injurious to public health, and it is an edible fat comparable in digestibility with other animal and vegetable fats. 8

That information acquired by research usually comes first, then the practical information from experience comes next; that is if a substance is introduced by research, it has to be proved in practical value by the clinical man before it can be accepted.

That he had had experience in the clinical problems of feeding as well as access to research results; that the final determination of the usefulness of the food is dependent upon the physician, and in case of an infant food it rests more particularly with the pediatrician (T. 771).

The witness testified that the food described in the agreed statement of facts is a wholesome, nutritious, useful food for the feeding of adults, children, and infants.

That he was acquainted with the composition of cow's milk, which briefly is composed of fats, carbohydrates, proteins, vitamins, salts and water. That it is not a perfect food; that the percentage of food value rests with the cream differences depending entirely upon the breed of cattle; that the average figure of butter fat at 3.8% would

be approximately half. That skim milk contains the milk solids which are important to human nutrition, because they contain the proteins, salts and a portion of the vitamins. That these milk solids of skim milk afford an economical source of food for humans.

That he was acquainted generally with the sources, utilization and nutritional qualities of the generally recognized vitamins. That an appreciable quantity of vitamins A, C, D, B, G, E, and possibly K are found in cow's milk (T. 774).

That fat soluble vitamins go with the cream, and water soluble vitamins stay with the skim milk. That of the water soluble vitamins found in skim milk, vitamin C is used for the prevention of scurvy, B has to do with growth and the prevention of dermatitis and a number of other things that are essential to the mechanism of the organism; that D, a water soluble vitamin, has particularly to do with the deposition of calcium and phosphorus in the bones and teeth and is necessary to growth and vitamin A has something to do with the prevention of infection, also growth and certain skin diseases and eye conditions.

That vitamin A varies in a quart of whole milk from 1,000 units to 2,500 units, and D will vary from nothing to 60 units. That vitamins A and D in whole milk vary with the breed of the cattle, the time of the year, and the food that they are being fed (T. 775).

That the vitamins are made synthetically and are also obtained from fish liver oils. That it is possible to fortify fat bearing foods with high potency A and D secured from natural sources such as fish liver and that vitamins thus supplied are equal in nutritional qualities

to vitamins supplied through butterfat or other sources. That it is a common practice to fortify whole milk and evaporated whole milk by addition of the fat-soluble vitamins A and D in the form of high potency natural sources and by irradiation. That skim milk by itself is a pure nutritious food which in the opinion of the witness can be mixed with pure refined cottonseed oil without injury to the nutritive properties of either or the combination of the two.

That oleomargarine is composed of animal and vegetable fats, churned with skim milk. That to his knowledge there had been no history of injury to the public health from the consumption of oleomargarine made from pure refined fats and pure skim milk. That in his opinion the mixture of pure skim milk and cottonseed oil does not render either of them harmful for the use of humans (T. 776).

That to his knowledge there is no reputable, recognized or competent authority to the effect that the mixture of skim milk and cottonseed would render the combination of the two harmful for the use of humans.

That butterfat and cottonseed oil are utilized in the body approximately equally, and to his knowledge there is no difference of opinion regarding this conclusion (T. 777).

"Q. Doctor, this product, Milnot and Carolene, the evidence shows here has been sold in the community for sometime and had a wide distribution. In the practice of your profession I will ask you if you have any evidence or knowledge of any injury to the public health by reason of the use of it in this community? A. I have not" (T. 777).

That pediatricians do not use evaporated whole cow's milk or fluid whole cow's milk without modification or addition of other substances, because it is not a complete food. It is necessary in the proper nutrition of children to add other substances.

"Q. In the feeding of infants, how would the product under consideration compare with a whole milk or evaporated whole milk as to its wholesomeness, nutritiousness and usefulness? A. It would be equal.

Q. What as to the vitamin content? A. Possibly over it.

Q. This product has the advantage? A. Yes, has the advantage over some evaporated milks.

Q. Doctor, is there any recognized, reputable or competent authority holding to the proposition that the use of a compound of pure refined cottonseed oil and evaporated skimmed milk fortified with 2,000 U. S. P. units of Vitamin A and 400 U. S. P. units of Vitamin D from natural sources in each 14 1/2 ounce can as a food for infants is injurious? A. There is not" (T. 778).

That butterfat contains a relatively high content of butyric acid, which is presumably the substance with which we have trouble in the ability of the infant to digest the fat (T. 778).

"Q. Have you pediatricians made use of foods compounded from pure skimmed milk and vegetable oils fortified with Vitamins A and D for a number of years? A. We have, yes.

Q. What are the names of some of those foods that are recognized by your profession as useful foods in the feeding of infants? A. Similac, S. M. A., Re-colac, Cemaec, Olac, and a number of others.

Q. In the practice of your profession do you resort to the use of such foods? A. I do.

Q. Is there any difference of opinion among the members of your profession as to the propriety of the use of those foods in infant feeding? A. There is not.

Q. Are such foods generally accepted by the profession and by the public for the feeding of infants? A. They are.

Q. Doctor, in Kansas, most of these proprietary foods, as I understand, are sold through the drug stores? A. That is right.

Q. Anybody can go to a drug store and buy a can of it for any purpose they want? A. They can.

Q. Would the use of Milnot and Carolene, the product I described in the question I propounded to you from the agreed statement of facts, would Milnot and Carolene in the feeding of infants create any problem different from the feeding of whole evaporated milk? A. I do not think it would.

Q. Would the sale of Milnot and Carolene result in injury to the public health because it might be fed to infant children in the place of evaporated whole milk? A. I do not think so, no" (T. 780).

That chocolate contains cacao butter which is the vegetable oil from the cacao bean. That it is widely used as a human food, being used in candy bars, chocolate milk, etc. That chocolate milk products are largely sold in Topeka and the State of Kansas generally and sold in high school cafeterias (T. 780).

Cross Examination.

On cross examination the witness testified that he had not done any personal research on this product (T.

781). That he was a member of the Kansas State Medical Society or Committee on Child Welfare and a member of the Nutrition Committee of Kansas, which is in direct relation with the Committee of National Defense at Washington. That this committee is responsible to the Kansas State Medical Society and has nothing to do with the State Board of Health.

That he wrote the original pamphlet put out by the State Board of Health in regard to child feeding in the state of Kansas.

The witness testified that he had read in general the following statement taken from a booklet entitled "Kansas Mothers' Manual" of June, 1939, of the Kansas State Board of Health, Division of Child Hygiene, under F. P. Helm, M. D., Secretary and Editor. That it was in general correct, and he did not see any objection to it. (T. 782).

A. (Reading): "There are two kinds of proprietary foods: those that contain no milk, and those that contain milk. The latter have a high proportion of sugar. Babies like them for this reason. Babies fed entirely on patent foods are sometimes fat, but they often show symptoms of anemia and of rickets and have little power to resist disease. Scurvy frequently follows the exclusive use of patent foods. All such foods are expensive. No proprietary food should be given to a baby except under the direction of a physician." (T. 783).

He also testified that he agreed in general with the statements made in the pamphlet "What Milk to Use for Babies" (T. 784). This pamphlet copied into the record advised mothers how to use fresh milk or canned milk, advised mothers that where the fresh milk is unsafe or cannot be digested the canned milk should be used. Discuss-

ing proprietary or patent infant foods, the pamphlet stated, "No proprietary food should be given to a baby except under the direction of a doctor" (T. 785-787).

The witness testified that he would recommend that Milnot be used for the feeding of children. That he did not personally use any of the product within the last two or three years. That he testified about two years ago in a case where Carolene Products Company was the plaintiff and the Board of Agriculture was defendant; that in that case he testified before you would prescribe any food, it would be necessary for research work to be done for a length of time to prove that it would not be harmful to the individual. That as far as he knew, there had been no work done on Carolene; that at the present time he considered Milnot a different product than that on trial at that time and at that time he understood they were using coconut oil without the addition of vitamins A and D. That regardless of what he knew at that time the product contained added vitamins A and D; that his familiarity now with research work caused him to recommend the product (T. 789).

WILLARD H. SHAFFER.

(T. 847-863.)

Direct Examination.

Willard H. Shaffer, an attorney, stated that he had made purchases of proprietary foods in various stores throughout Kansas, and he bought them without prescriptions.

Defendants' Exhibit 33 (T. 849-862) is the list of stores visited by Shaffer with the list of the proprietary foods handled by each. One hundred and twelve stores

in Kansas were visited by the witness, and those stores handled such products as S. M. A., Similac, Dryco, Klim, Hylac, Sobee, Mull-Soy, Recolac, Hemo, Biolac, Ovaltine, Beta-Lactose, Dextrogen, Lactogen, Vitavose, Alerdex, Margarine, Nestle foods, and others, fifty-six different products being purchased. Practically all of these contained milk, partially defatted milk, or skim milk, together with a fat other than butter fat.

Defendants' Exhibits 35 to 90, inclusive (T. 864 to 917), labels from the above products, were received in evidence.

Defendants' Exhibits 91 to 151 (T. 918 to 937), being receipts for the above purchases, were received in evidence.

DR. O. O. STOLAND.

(T. 750-768.)

Direct Examination.

Dr. O. O. Stoland, professor of physiology at the University of Kansas, testified that the product described in the agreed statement of facts was a wholesome, nutritious, useful food for human consumption and for children (T. 759). The witness testified that pediatricians were more qualified to pass upon the use of the food for infants but from his knowledge he would say that it should be valuable for infants (T. 759).

That he was of the opinion that evaporated whole cow's milk should not be fed to infants except upon the order of a physician. That he would say that the product in question was a more useful food for the feeding of infants than evaporated whole milk because it had more

vitamin D in it, and milk is deficient in vitamin D (T. 760).

Cross Examination.

The witness testified that he had not had any clinical experience with the product himself, and the most he knew about it was what he heard from pediatricians and the contents of the product as stated (T. 765).

Q. Do you recommend that a mixture of skimmed milk and a vegetable oil fortified with Vitamins A and D be substituted for whole milk in the diet of infants and children? A. Yes, sir.

Q. You recommended it be substituted? A. Yes, sir.

Q. All over the country? A. For cow's milk, yes, I would.

Q. In other words, you would recommend that this product of Milnot, for instance, replace milk in the diet of infants and children in this country, cow's milk, whole cow's milk? A. Altogether, you mean?

Q. Altogether. A. Oh, I don't know. I can't see any reason for saying that, but I can't see any particular advantage or disadvantage either way, excepting the one I mentioned that you are sure of the vitamins. You see, it is so hard to answer that question 'Yes' or 'No' for this reason: If you take the whole milk and add to it vitamins or irradiate it, you understand then it would be different, you see. But I would say if you had this product as stated, then the ordinary run of milk as it is, on the whole this would be a safer proposition than the milk. Now, if you take and improve the milk, it would be different, don't you see?" (T. 765-766.)

MILDRED E. PAXTON.

(T. 947-952.)

Direct Examination.

Mrs. Mildred E. Paxton, of Topeka, Kansas, testified that she had four children, aged 10, 9, 7 and 1 year (T. 947); that she had used Carolene and Milnot, having first started to use it over six years ago.

The witness identified Defendants' Exhibit 31 (T. 951) as a group picture of her three oldest children, and stated that the oldest boy was nine years old, the other one seven, and the girl ten. The exhibit was introduced in evidence, and is reproduced on the opposite page.



The witness stated that when the younger boy was eight months old she began to feed him Carolene in a bottle, diluting it half water and half Carolene; that the only other food he had was his cereal (T. 948); that each day he was fed about four 8 ounce bottles of the Carolene mixture, and he did just fine on it and has been a healthy boy ever since; that after the boy passed the bottle stage he continued to use Carolene on cereals, and she cooked with it and whipped it (T. 949).

That she knew the product was skim milk, and at the time contained coconut oil and had added vitamins; that all of the family had been using it on their cereal and she had used it in cooking and in coffee (T. 949); that it had been used in place of milk in her household; that she had found the product to be a satisfactory and wholesome food to nourish her children and family for the ordinary purposes that milk would be used.

That Carolene was a lot cheaper than condensed milk, it being three for a quarter, while condensed milk was 10c a can; that her family resources were limited (T. 950), and the saving was of considerable value to her (T. 951).

PLAINTIFF'S EVIDENCE.

DR. ALEXIS F. HARTMANN.

(T. 1272-1313.)

Direct Examination.

Dr. Alexis F. Hartmann testified that he lived in St. Louis and was a physician specializing as a pediatrician; that he had a B. S. degree, a Master of Science Degree and an M. D. Degree from Washington University; that he was a member of the American Pediatric Society, the

American Academy of Pediatrics, Society of Biological Chemists, the American Medical Association, the Southern Medical Association, the Missouri Medical Association, the St. Louis Pediatrics Society and the Society for Clinical Investigation; that he had been in the Department of Pediatrics at Washington University School of Medicine for 20 years, and Chief of Staff for the last 6 years; that as Chief of Staff, he was head of the Department of Pediatrics, Washington University School of Medicine, and chief physician of the St. Louis Children's Hospital; that as such he was responsible for all of the pediatric teaching.

That he had conducted research in the studies of pediatrics involving infant nutrition, and had prepared about a dozen papers on infant feeding and nutrition in a broad sense, and two or three dealing with feeding as related to growth and development (T. 1272-1273).

That either directly or under his supervision there are several thousand babies in the St. Louis area that are observed or treated during the course of a year (T. 1274). That he had been interested in nutrition in a broad sense, but more the acute disturbances of nutrition, disturbances of water and mineral balance, than anything else; that when he entered the department he worked with Dr. Marriott, then the head of the department, whose chief interest was the nutrition of infants. That he shared with him most of the work done in 1920; and he had continued to work in that field ever since; that he succeeded to the head of the department, Dr. Marriott having died in 1936 (T. 1274).

"Q. Will you trace briefly the history of your work in the development of the science of infant feeding? A.

Yes. When I was an interne in the Children's Hospital in 1921 and 1922, and for the next year and the next year after that, I was assistant resident and resident physician, the status of infant-feeding was pretty much (T. 1274) in a flux. Methods for artificial feeding were just coming into use and being put really on some sort of scientific basis. For instance, feedings proposed to substitute for human milk were studied and scrutinized and analyzed as far as their conformation to what was then considered the essentials of nutrition. That is, we believed that any feeding to be adequate had to have sufficient calories to meet the entire energy requirements of the infant, which included not only calories to supply energy for basal metabolism but for growth, for activity, and for those that were going to be lost into the excreta. And a second point concerned the qualitative aspect of the diet; any artificial food should have enough of the right kind of protein, of carbohydrate, of fat, of water and of minerals and of vitamins. As a third point, it had to be digestible so that it could be digested and assimilated properly; and then it had to be, as a fourth point, free from harmful bacteria.

Now, those points were made, I think first perhaps by Dr. Marriott and have survived these years and around these essentials, I should say, all studies of nutrition are conducted. If you could satisfy all four points to the extent of 100% and demonstrate that they were satisfied, you would be right in your opinion that you were giving a satisfactory artificial feeding to a baby. Now, over the course of years, studies have gone on with those principles as a foundation.

Q. Do you know whether or not it ~~has been the~~ general practice of pediatricians to use whole milk in infant feeding formulas? A. If you mean by 'whole milk' milk from which nothing has been removed except water, especially evaporated milks, I would say yes, but pediatricians generally define that term of whole milk as (T. 1275) ordinary cow's milk and not evaporated milk. Evaporated milk is by far the most commonly used today.

Q. About what percentage of the artificially fed babies are fed on evaporated milk—I mean whole cow's milk, including evaporated? A. Including evaporated milk, with the additions that are made, I would think from 90% to 95% of the babies here in St. Louis are so-fed.

Q. What has been your experience in the feeding of evaporated milk to infants? A. Dr. Marriott's earliest attempts to feed babies artificially were made by adding lactic acid and carbohydrate to Pasteurized and then boiled whole cow's milk. In just a few years he adopted evaporated milk as the basis for his infant formula and evaporated milk has continued to be the foundation for the making of infant formulae from; I should say, just about 1924-25 and has been the kind of food used almost routinely in the wards of the Children's Hospital and in the wards of the Maternity Hospital and in the Out Patient Department.

Q. Would you say that infant feeding of whole cow's milk as a result of long experience and clinical research is now simplified and standardized? A. Very much so. And as for this simplification of infant feeding, I think Dr. Marriott has been recognized as making his chief contribution to pediatrics.

Q. Does whole cow's milk satisfy the nutritional needs of the infant and the growing child? A. When supplemented with the proper supplements, extra carbohydrate in the case of infants and extra vitamins that are not there at all, or there in such small quantities, or there uncertainly that one couldn't be sure about their presence, in a satisfactory amount.

Q. Under those conditions do children raised on whole cow's milk (T. 1276) develop normally? A. Yes.

Q. How do we know this? A. Well, by two kinds of observation, I should say. First, by those most easily made which would concern physical measurements such as height and weight and other measurements which might concern sitting length and width, comparing these physical measurements of growth with what are standard normal physical measurements of growth, and then much more detailed studies which are chemical in nature and which include the actual determinations of balances of certain of the essential minerals, such as nitrogen as a measure of cellular growth of protoplasm, and of minerals, such as calcium and phosphorus as phosphates, and by such studies we have concluded that growth and development of babies on formulae made of whole cow's milk with the supplements that we have mentioned are normal.

Q. Has it required any length of time to reach these conclusions? A. Yes. For instance, people like Jeans at Iowa, Isadore Bittker up in the Children's Fund at Detroit, have emphasized that long-term balance periods are necessary before any conclusions are drawn. For instance, Dr. Jeans right now in studying the need for vitamin D, just one factor, feels that anything less than a year's study is too short, and all of his present experi-

ments are just such as those, requiring a whole year to gather data.

Q. That is only on one item of nutrition? A. Just on one item and covers only perhaps the most critical part of the infant's growth, when he is most likely to develop rickets.

Q. Now, have these studies followed children through their infancy and in some cases the reproduction period? A. Yes, there are many children now who have been followed to adulthood and who in (T. 1277) turn have had children, so that we know that babies fed on whole cow's milk with proper supplements have grown up and have had offspring which seem quite normal also.

Q. Have you had occasion to use fats and oils other than butterfat in infant feeding, such as S. M. A.? A. Yes, S. M. A. has not been used as much as certain others in babies who are allergic and in whom one suspects that milk might be the cause of the allergy. It seems good practice frequently to do away with milk entirely from the diet and to substitute food without any milk at all, such materials, like, for instance, Sobee, which has soybean as its foundation, and recent artificial formulæ that are made, for instance, from split casein, a mixture of amino acids and polypeptides, particularly the preparation Amigen made by Mead Johnson & Company, and to this—as a basis for the nitrogen—to this, where the nitrogen is in the form of amino acids one has added fat in the form of olive oil, together with vitamins and salts and the like. So there are quite a number of preparations that have been used in which fat is not ordinary milk fat.

Q. Are these preparations fed to normal babies? A. In our institution such preparations are fed only to babies who are sick and who are sick with something which we feel might be due to milk; that is, generally, allergic babies.

Q. For how long a time are these other fats and oils used in the diet of an infant? A. Our attempts are usually to get these children back to a whole milk formula just as soon as they can, and it is a matter perhaps of some weeks, perhaps even some months that they are kept on non-milk containing food. But just as rapidly as we can get them to a formula about which we know more (T. 1278) good comes, so far as the nutritional value is concerned, we attempt to get them on such a formula.

Q. Why do you try to get them back? A. Well, for the reason that we are not certain that they might continue to do well on such highly artificial feedings. We don't know and we feel we shouldn't take that risk because we feel that our experiences have been entirely satisfactory in demonstrating that whole cow's milk with proper supplements is a satisfactory feeding.

Q. It has taken 20 or more years to demonstrate that? A. Yes, and it has been demonstrated in the hard way. I mean the first attempts to feed babies without human milk were made without good scientific background and with many mistakes and many babies have died as a result of faulty feeding because of ignorance on our part as to the right method of feeding such babies.

Q. What did you mean by proper scientific background? A. In two ways. We have alluded to it not only by the actual following of infants throughout infancy and childhood and the determination at times as

to the status of their growth and development, but also scientific data, which would include the experimentation on animals and which would either point towards adequacy or inadequacy of a particular kind of food to meet nutritional needs.

Q. Are members of the medical profession generally authorities on matters of nutrition? A. No, I wouldn't say so.

Q. On whom does the medical profession depend for the newer knowledge and discoveries in the field of nutrition? A. Well, first on the biochemist, who is interested in nutrition in animals, and secondly on the clinician, whose major interest is human nutrition, and in the latter group I would say the pediatricist (T. 1279) first, since pediatrics concerns itself largely with an attempt to see that babies and children grow and develop normally, and then also those physicians who are interested in special nutritional problems such as diabetes and nephritis and such medical conditions where nutrition is perhaps the most important part.

Q. This work you are doing in the general supervision of these babies in the hospitals and that sort of thing, would you say that was clinical work? A. Clinical with always a certain amount of laboratory check-up.

Q. Would you consider it a sound practice or policy that the biochemist evaluate a new food by means of animal experimentation before the physician uses this food in the practice of medicine? A. Yes, I would now, in contrast to what perhaps may have been thought some 25 years ago. And the reason that Marriott and others working at that time were willing to study very carefully babies and make chemical observations on infants was

because there simply was not enough known at the time to make animal experimentation a profitable line of procedure. I would put it this way: if there is any question at all, it is one that is shared about fifty-fifty, whether we can't as successfully feed babies without human milk with good whole milk formulae and supplements rather than anything else. Now, with that agreed upon by most people—at least it is a fifty-fifty opinion—I would say that we are not justified any longer in trying out new kinds of food on normal children without first animal experimentation.

Q. Would your opinion be the same even if there was no reason to suspect that the untried new food was not nutritionally adequate? A. Yes, it would, because it is no longer a question of finding (T. 1280) a good substitute for human milk in infant feeding. That has been established. Now to depart from an established feeding and leave it for an untried one, in my opinion, is just not justified without the experimental proof that the proposed new feeding is very definitely superior.

Q. What would your opinion be if the nutritional research on animals showed the product to be inferior to milk? A. I wouldn't accept that on its face value either way. I would be guided, however, in this way: if I knew a proposed food could be shown in animals to have a deficiency and not to be as good as, for instance, a food made from whole milk as its basis, it would make me just that much more anxious to have any new infant food proved beyond doubt that it is adequate. On the other hand, I would be willing to admit, however, that in animal experimentation conditions may not always be duplicated and may not always apply directly to human beings.

Q. Can the nutritional effect of a certain diet be determined by feeding infants for only a short time? A. No. I am sure of that.

Q. This may be duplication, but how long might it require before slight nutritional deficiencies in the diet of an infant would be manifested clinically? A. I can answer that perhaps in this way: infants who get no additional Vitamin C in artificial feeding very rarely develop signs of scurvy that are recognized clinically until they are beyond six months of age, yet by refinement of examinations, particularly chemical examinations, one can demonstrate pre-clinical scurvy some months before clinical evidence of deficiency exists. Much the same would concern Vitamin D deficiency, so it seems to me (T. 1281) that we would have to adopt the same stand that animal nutritionists adopt. We would want to show that babies not only develop through infancy but through childhood, become adults and can go ahead and have offspring who also seem normal and are capable of developing normally before we would ever prove that point.

Q. Are you familiar with the defendant's product in this case called Milnut or Milnot, containing a mixture of skimmed milk, hydrogenated cottonseed oil, 2,000 units of Vitamin A and 400 units of Vitamin D per can? A. I am familiar with it to the extent that I know it exists and have seen cans of it, but beyond that, I am not.

Q. You do know the components of it, however, as I just stated? A. Yes.

Q. Are you familiar with the research on the comparative nutritive value of butterfat and vegetable oils which have been conducted by leading workers in the field of biochemistry and nutrition, such as Drs. Hart

and Elvehjem? A. I have had occasion to look over the work of several groups of workers, the Wisconsin group that you refer to just now, Schantz and Elvehjem and Hart, also the group at Minnesota, and have seen some of Professor Hughes's work from the University of Kansas Agricultural School.

Q. What in your opinion is the consensus of the result of this work as to the comparative value of butterfat and vegetable oils? A. The opinion seems to be shared by all of the workers that there is something in butterfat which is absent in the other vegetable oils which is desirable as far as nutrition is concerned.

Q. What significance do these results have to you as a pediatrician? A. Perhaps I have answered that before. If I were ever inclined (T. 1282), which I am not, to substitute an unfried method of feeding in babies, I would be much less inclined to do so with such data as this now available.

Q. Doctor, would you consider it advisable in the interest of public health and in the light of our present scientific knowledge, that a product composed of skimmed milk, vegetable oil, and Vitamin A and D be used in place of whole milk in the diet of infants and children, and give any reasons you have for your answer. A. I would be against such a thing for the reasons that I have already stated. There seems to be absolutely no need for it and there is a risk taken because of absence of information about such a product. That is as much as I would want to say about it" (T. 1283).

Cross Examination.

On cross examination the witness testified that his experience had not been confined to the formula prepared

by Dr. Marriott; that into the St. Louis Hospital came babies with nutrition problems of one sort or another which often represented very complicated problems. These children have to be studied expressly with the idea of trying to find out what type of feeding would be best utilized to serve their nutritional needs (T. 1283). That in some cases they are unable to use the Marriott formula and resort to other formulae or methods of feeding; that his experience had been satisfactory with Marriott's formula, and he preferred to use it; that it differed very little from the formula developed by Dr. Jeans, a pupil of Dr. Marriott's, and other formulae (T. 1284).

Q. What is the formula? Just tell me what you put in it. A. For very young infants, evaporated milk is diluted with about three parts of water for each two parts of evaporated milk so that the final concentration is a little less than the original whole milk before it is evaporated. Then carbohydrate, some simple type of carbohydrate as hexose, or with the complexity of, let us say, Karo syrup or of dextrin and maltose preparations, is added so that the total carbohydrate content becomes some 7% or 8% and therefore approaches that of human milk, and then in Marriott's own formula lactic acid was added to a final concentration to five-tenths of (T. 1284) one percent. In Brenneman's the lactic acid is usually omitted. That constitutes the formula itself which supplies the essential food substances and the calories but without supplying extra vitamins which are needed. They then are supplemented in the form of either orange juice or tomato juice for Vitamin C, cod liver oil or cod liver oil concentrates of one sort or another for A and D

in particular, and occasionally there seems to be need for a supplement of the Vitamin B Complex.

Q. Why do you use Vitamin D in the form of fish liver oil concentrates? A. Why do we use D?

Q. Yes. A. To prevent rickets.

Q. Evaporated milk is deficient in Vitamin D? A. Evaporated milk, yes.

Q. And if you fed the milk without the supplement containing adequate quantities of Vitamin D, rickets and tetany would result? A. In a high percentage of cases.

Q. A high percentage. So that by trial and error pediatricians found that there was a deficiency in milk in Vitamin D and you devised means and ways of providing that deficiency and overcoming it? A. That is correct.

Q. Without taking care of that deficiency it would be highly dangerous to feed evaporated milk to infants, would it not? A. Yes, if you recognize this point. Most of the evaporated milks that now would be available have had Vitamin D already added in the form of irradiation.

Q. But that isn't sufficient, is it? A. It isn't sufficient in many localities, and it isn't sufficient in this locality. The study we made ourselves proves that (T. 1285).

Q. It is so generally insufficient that no pediatrician would rely on the statement on the can as to the adequacy of the Vitamin D content where it is done by irradiation? A. Well, they would read it had 135 units, which is the usual unitage to the 14-ounce can. They would probably decide in their own minds that at least 400 units—

Q. (Interrupting) To the can? A. (Continuing) —would be desirable and supplement it.

Q. Anything less than 400 units to the can would endanger, would render the infant subject to rickets? A. Yes, if you understand this too: there are other ways of getting Vitamin D besides from the milk. If such infants were born in the spring, for instance, and were kept out of doors in the spring, summer, and fall, from the sunshine they could get a lot of Vitamin D effect.

Q. If they had a summer like last summer when it was cloudy and rainy all the time, there would be danger then, wouldn't there? A. Well, yes and no. There are means of determining the status in which your baby is. One can, by determining the inorganic phosphate concentration of the serum and the phosphatase content of the serum, and then by x-ray determination tell whether a baby has or is developing rickets or not.

Q. In other words, if he was under the direct care of a pediatrician who could make the proper tests as you go along from day to day or week to week, the danger wouldn't be as great as if some mother who didn't have the advantages of a pediatrician fed the child? A. That is correct.

Q. And you would disapprove of the use of evaporated milk by the mother without knowing anything about the supplements necessary to (T. 1286) be used and without having the advice of a pediatrician? A. It is our advice always to feed babies with instructions of either a pediatricist or the general practitioner who is well-versed in the art of infant feeding.

Q. And without that advice even with evaporated milk there would be danger to the child? A. With the

limitations that I have just set forth, I would say it that way.

Q. Doctor, what percentage, if you know, of babies born in the United States are artificially fed? A. From what age to what age would you want to put that?

Q. From the day they are born or within the period when they are supposed to nurse their mother. A. How long are they supposed to nurse their mother?

Q. You know better than I do on that. A. Well, most babies except the illegitimate ones, for instance, or babies whose mothers are so ill that nursing is inadvisable because of the mother's condition, are put to the breast, but less and less seem to be able to remain at the breast and get enough food to meet their nutritional requirements. I don't know that any good accurate figures are really available. I would think that at least half of the babies, though, that we see coming into our Out Patient Department and to our baby clinics and the wards of our hospitals are artificially fed before they are six months old.

Q. Artificially fed, you say? A. Before they are six months old.

Q. But a large percentage of that 50% depends on the mother partially for nursing for its food? A. Well, that would be a hard thing to evaluate too. We believe that unless at least half to two-thirds (T. 1287) of their food requirements are met by human milk from breast feeding, it is not desirable to continue with such breast feeding. At least 50%; if you can't get at least half the food that you should be getting from the breast, it becomes a too difficult way of feeding, too time-consuming, too hard on the mother, to continue with breast feeding, and the practice of most pediatricians then would be to change such babies over to complete artificial feeding.

Q. Then as I understand you, about 50% of the babies are breast-fed. Then of the other 50% there is a percentage of them that are both breast-fed and artificially fed? A. For certain periods of time during infancy I would say that would be approximately correct.

Q. What percentage of that 50% would you say are both breast-fed and artificially fed? A. Well, at the start it probably would be a high percentage because the history of such cases is pretty uniform. When breast milk once begins to diminish in quantity, it also diminishes in quality and while you may attempt for some weeks to feed a baby both by breast feeding and artificial feeding, generally you have to go over to artificial feeding completely in a matter of some weeks to perhaps a month or so.

Q. That is after birth? A. After birth, yes.

Q. How long after a baby is born before it ordinarily can take foods other than the formula that you prescribe for it? A. It is pretty common practice to start green vegetable feeding at the age of four months, four and a half, or five months, and at about that time cooked cereal feedings are also started, sometimes simultaneously, sometimes in just a couple of weeks, but before a baby is six months of age he is generally started on vegetables and (T. 1288) cereals and after that, constantly each month new additions are made.

Q. Now, as I understand you, it doesn't make any difference what system of artificial feeding is resorted to, there is more or less danger unless the feeding is done under the direction of a competent pediatrician? A. Well, could I enlarge on that in another way to bring out—you are interested in getting some information?

Q. Yes, sir. A. About that point, I assume. Now, suppose you take a food like whole milk, which has been made digestible by the process of evaporation, and suppose you gave nothing but that to an infant. Now, you would know that it is deficient in iron.

Q. Who would know that? A. We know that.

Q. The doctor? A. Yes.

Q. All right. A. But it is not very likely that the baby would show a deficiency in iron because of the fact that before his store of iron which he has at birth is used up, he would be getting additional sources of iron, especially from his green vegetables. Also, the same thing would be true, to a less complete extent, however, from the standpoint of the Vitamin C content. While you know that there isn't enough in that evaporated milk, out and out clinical scurvy would not be expected until the baby is at least seven months of age, and by that time he may also be getting some additional Vitamin C. If the evaporated milk were the irradiated variety and had at least 135 units to the 14-ounce can of Vitamin D, and if the baby were exposed to sunlight, he may not get rickets at all or if he got rickets, he might have only such mild rickets that it would heal completely during the summer (T. 1289) months. In other words, while we admit that evaporated milk is not a complete food from every respect, we do think that it is an excellent food to which it is very easy to make essential supplements and is the most complete food that we can think of to give such a baby.

Q. To get back to my question now, while assuming that all you say is true, yet there would be danger in a mother beginning the feeding of a ten-day old or week old baby on evaporated milk without the advice and aid of a

pediatrician? A. Well, let me put it this way: There— would there be any more danger than that baby would sustain if he nursed the breast of that mother, if in turn that mother were not eating satisfactorily? The same deficiency diseases which are seen in cow's milk-fed babies are occasionally seen in breast-fed babies. Human milk sometimes is also quite inadequate and deficient.

Q. I will get back to my question now. Would you recommend the feeding of evaporated milk generally by mothers unacquainted with the rules of feeding without the aid of a pediatrician? A. We certainly preach such medical assistance. It is also true that there are many other sources of information which are excellent. For instance, it is difficult now-a-days not to see printed some place in the newspapers and all of the journals in the various Government publications, schemes for feeding babies which have been gone into and accepted as adequate.

Q. In other words, if the mother was intelligent enough, educated sufficiently to read the literature on the subject of infant feeding, you think the danger, of course, would be less? A. Yes.

Q. But if she couldn't read at all and didn't know anything about (T. 1290) vitamins and iron supplements and things of that sort, the danger would be very great, wouldn't it? A. It depends on where they were. There are some communities that are set up so that, for instance, visiting nurses could go into the home and give mothers just as good instructions as physicians could because they have learned those from physicians.

Q. I hand you the March 19, 1942, issue of Life. You are acquainted with that publication? A. Yes.

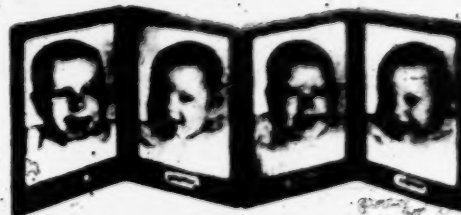
Q. That is a national publication circulated all over this country. I call your attention to an advertisement there by the Carnation Milk Company and ask you if there is anything in the advertisement of that that would indicate to a mother how Carnation Milk ought to be fed?

* * *

Defendants' Exhibit 161 (T. 1312), the Carnation advertisement in Life magazine, was read into the record by the witness, and was later offered in evidence. It is reproduced on the opposite page.

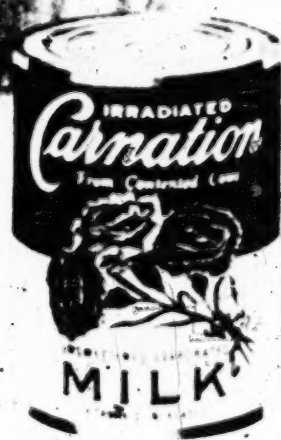
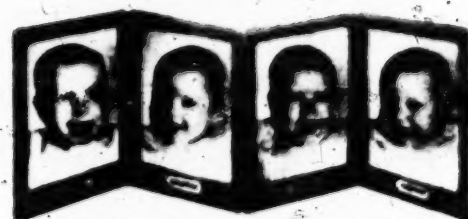
Four of a kind !

*Two Sets of Quads... and
all are Carnation Babies*



all are Carnation Babies

016



[Faint, mostly illegible text, possibly a testimonial or descriptive paragraph.]

TUNE IN THE CARNATION CONTENTED HOUSE
MONDAY EVENING 10 PM. NETWORK

Irradiated Carnation Milk
FROM CONTENTED COWS

"Q. Is there anything in there to advise a mother that would read that advertisement that she couldn't with safety feed Carnation milk without the supplements that you have spoken of? A. Well, how often would mothers be blessed with quads? That is what that seems to be stressing.

Q. Now, wait a minute. That would apply to any baby, wouldn't it? A. Well, surely it would.

Q. Well, this is a serious matter. Let's talk about the serious side of it. A. You didn't ask that. You say do I approve of such an advertisement? I would say, no.

Q. No, I didn't ask you that, but since you have answered it, I will accept your answer. I think you are right. Doctor, who are some of the pediatricians of this country that have other formulae for the feeding of infants other than the one that you practice by? A. Well, there are many proprietary preparations on the market. There are different kinds of dried milks, some of which have had part of the fat removed, half of the fat removed, for instance, like Dryco, and some of which have had none removed, like Klim. Then there are products that differ considerably from the original whole milk, such as the synthetic milk adopted that Dr. Gerstenberger first devised and others that are given names like Similac and Reolac, and there are protein milks on the market, viz., 'milks,' as they are called sometimes, just any number. Occasionally these substances are used in infant feeding (T. 1292).

Q. Aren't there pediatricians in this country who depend on those products in artificial feeding of infants just as you depend on Marriott's formula? A. I should think certainly there are, but I would think they are getting fewer all the time.

Q. Do you know Dr. Holt of Baltimore? A. Yes, sir.

Q. He is an eminent pediatrician, isn't he? A. Yes, sir.

Q. His opinion is entitled to weight, isn't it? A. Yes, sir.

Q. You are acquainted with his experiments and his work with the artificial feeding of infants? A. Yes.

Q. You know, do you not, that he has used products of skimmed milk or milk from which the butterfat has been withdrawn and vegetable fats put in such as coconut oil, soybean oil and others? A. Yes, sir.

Q. He has reported good results, hasn't he? A. His reports, if you will look into that, deal principally with the digestibility of fats of sources other than butterfat and I know of no detailed work of his from other aspects of nutrition.

Q. You know Dr. Blatt of Chicago? A. Yes.

Q. He has done work in the nutritional field, hasn't he? A. Yes.

Q. You spoke of Dr. Marriott and Dr. Jeans. Dr. Jeans has recently written a book 'Infant Nutrition' by Marriott and Jeans? A. Yes.

Q. You are familiar with that? A. Yes.

Q. I suppose you went over the manuscript of that before it was published? A. No, I really didn't.

Q. This was published in 1941? A. That is right.

Q. Very recently. In the Preface, Dr. Jeans says on page 7 (T. 1293): 'There are numerous ways in which infants may be fed successfully, and there is no one method of feeding or type of food which is to be recommended to the exclusion of others; on the other hand,

there is no reason to resort to the use of complicated formulas or expensive proprietary preparations when the particular requirements in the individual case may be fully met by simpler means." Do you agree with that?

A. That is right.

Q. In speaking of fat metabolism at page 71, Dr. Jeans says this—I don't know; I suppose it was in Marriott's book: "Certain vegetable fats with a high proportion of unsaturated fatty acid are absorbed somewhat more readily than the animal fats more commonly fed to infants. The increased absorbability is of little importance for the normal infant, but may be advantageous for sickly and delicate infants. Removal of fat from milk and substitution of other fats would be an advantage in infant feeding only for frail infants and only if more readily absorbable fats were chosen." Do you agree to that? A. That is correct.

Q. Doctor, what is the function of Vitamin A? A. It has numerous functions.

Q. Is Vitamin A essential to body growth? A. Yes, they all are.

Q. D is essential? A. Yes.

Q. Dr. Jeans at page 96 of his book says: "On the other hand, infants given 1,800 to 2,000 units of vitamin D daily as cod-liver oil, or as cod-liver-oil concentrate dispersed in milk, grow rapidly for the first few months, then slowly, so that the average rate of growth for infancy is far slower than that of the 300- to 400-unit group, and even slower than that of the babies given 135-unit milk. Decreasing the daily vitamin D intake to 400 units (T. 1294) results in an increased growth rate within six to eight weeks." Do you agree to that statement? A.

No. I can't say that I do. He is absolutely alone in that statement and it is contrary to all of the other studies on Vitamin D.

Q. What is your disagreement with it? A. Well, I don't know of anyone really who feels that in all instances 400 units will always be an adequate amount of Vitamin D, and Jeans's point there, which you didn't bring out, was that when much larger amounts of Vitamin D were fed, from 1,800 to 3,000 units, the reason that they seemed to have less retention of calcium and phosphorus was because they took in less milk as a result of these increased vitamin intakes and therefore had less food to retain.

Q. How could you provide equal amount of food and increase the vitamin content up to 1,800 to 2,000 units? I believe that is what he said. You said 3,000, 1,800 to 3,000 units. A. Now, against those statements are many that have originated from the laboratories of people very much interested in rickets and in Vitamin D. For instance, Dr. Park, Edward J. Park, Dr. Martha Elliott, and as you know, Martha Elliott is in the Children's Bureau, and all of the published work of the Children's Bureau would certainly indicate that the majority of opinion throughout the United States is for a more liberal D intake than Jeans gives.

Q. So then, as I understand you, Doctor, you think Dr. Jeans is too low on his estimate of the requirement?

A. Well, I am very much interested in his contention, and when he was here a month ago to give the details of that study, some very interesting things were brought out.

Q. Well, you would think then— A. I am not sure at all. I (T: 1295) mean I would like to leave this an

open question. The point is this: what many people consider to be early evidences of rickets in the x-ray, Jeans does not accept as early evidence of rickets, and it is largely on that that he bases his contention that 400 units is the optimum.

Q. You think there might be some doubt that it is, that it ought to go higher? A. Exactly.

Q. Certainly it ought not to go lower? A. I would feel that way about it.

Q. Doctor, I want to read to you from page 171 of Dr. Jeans's book: 'Without question, all of the theories which have been advanced to explain the relative unsuitability of cow's milk for the feeding of the human infant contain certain elements of truth, and every attempt at modification based upon the various theories has served to increase our knowledge of the nutritional needs and digestive functions of the infant and has brought us nearer to the solution of the problem of satisfactory artificial feeding. There is no one method of artificial feeding which is the only correct one. Infants may be fed artificially in a variety of ways and good results obtained. On the other hand, any system, unintelligently used, results in numerous failures. No matter what method is used for the preparation of the formulas, certain essential requirements must be fulfilled.

The nutritional requirements of the infant are fairly definitely known and the capacity of the infant to digest the various food components either singly or in combination is also known. The effects of bacteria introduced by way of the milk are understood, as are the methods for rendering the milk free from harmful bacteria.

With our present knowledge it is possible to formulate the (T. 1296) essential requirements of satisfactory artificial feeding, as follows:

1. Sufficient calories.
2. Sufficient protein, carbohydrate, fat, mineral salts, water, and vitamins.
3. Absence of harmful bacteria.
4. Ready digestibility.

Any form of food which meets the above requirements will be successful, whether it be prepared from cow's milk or human milk whether it be prepared from fresh liquid milk or from evaporated or dried milk, whether it be sweet or sour, and whether or not there be any milk at all present. It will make little difference whether the basis of the diet be a proprietary food obtained from the drugstore or simply milk and sugar obtained from the grocery store. Good results may be obtained provided only that all of the above requirements are met. Failure to meet any one of these requirements will result in failure of the feeding as a whole. Do you agree with that statement as a general proposition? A. Yes.

Q. Now, I believe you said that deficiency of Vitamin D in the infant's diet leads to rickets; that is the danger? A. That is right.

Q. Now, that danger is prevalent even though you feed evaporated milk, if the mother or the pediatrician doesn't properly supplement it with products that will provide the Vitamin D?"

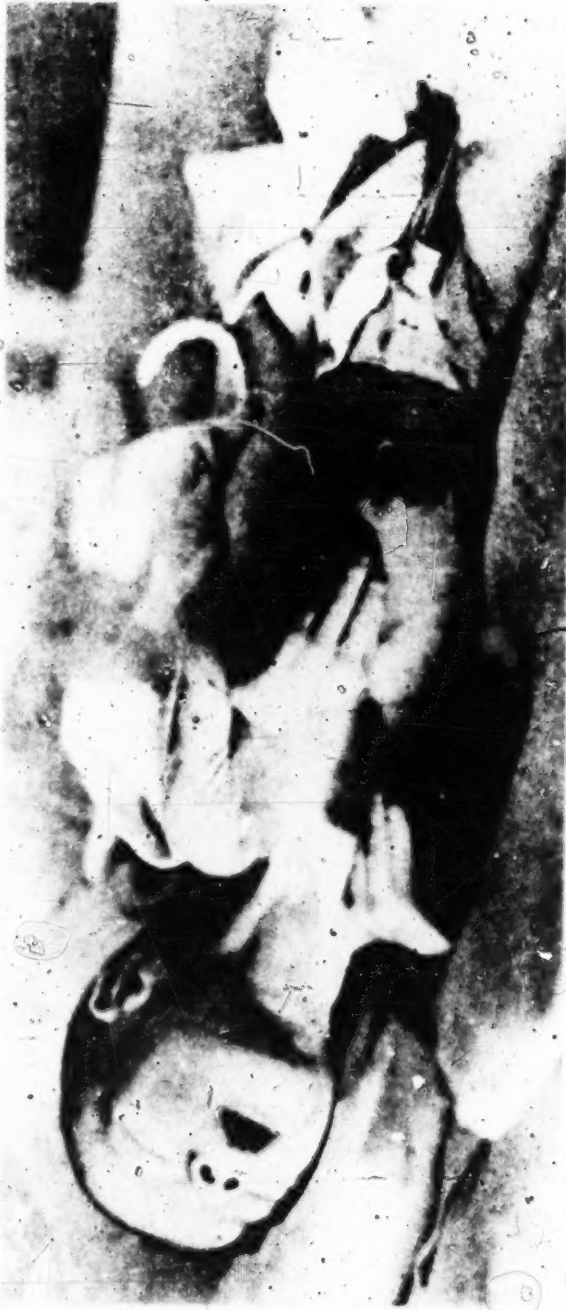
The witness identified the picture, Defendants' Exhibit 159 (T. 1298), as a fair representation of a child with rickets. The picture is set forth on the opposite page.



Q. Doctor, what is tetany? A. That is a condition of increased neuromuscular debility which has a number of causes for its development. Briefly stated and chemically stated it may be considered as the condition when certain irritative ions predominate, such as sodium, potassium, and hydroxyl ions, over the present ions of the neuromuscular chemical content, which are calcium, magnesium and hydrates. It may result specifically because of an inadequacy of Vitamin D, when it becomes known as the rachitic type. It may result from a deficiency in activity of the parathyroid glands, when it becomes the parathyroid type of tetany. It can result, however, from a failure of absorption of calcium from the intestine due to diarrhea, especially chronic diarrhea, which is associated with loss of calcium salts, and it may result too from alkalosis, either the result of hyperventilation or the result of bicarbonate excess, the result either of intake or the vomiting of acid. So there are quite a number of causes for tetany.

Q. Like rickets it is caused by the deficiency of Vitamin D in the diet? A. That one type is, yes" (T. 1299).

The witness identified the picture, Defendants' Exhibit 160, as a picture of a child with a type of carpopedal spasm, and stated that it looked as if it was in a state of tetany (T. 1299). The exhibit is reproduced on the opposite page.



Q. A diet containing sufficient Vitamin D fed to an infant will avoid tetany and rickets, as I understand you? A. No, sir, not always. The kind of feeding would have a lot to do with it and a departure from optimal ration of calcium and phosphorus can still give rise to rickets with what otherwise would be a sufficient amount of D. Too little calcium in a diet could do it also. Also a disturbance of digestion with faulty absorption of calcium could do it, and a disturbance in the acid base balance of the body, which would tend towards alkalosis could do it, and a disturbance in the parathyroid activity despite otherwise adequate intakes of D.

Q. So that feeding a child evaporated milk, it may be subject to a condition, even though you supplemented the Vitamin D, that would result in improper calcification or use of the calcium; is that right? A. Yes.

Q. I didn't hear you, Doctor. A. Yes. Rickets can be the result of things other than just D intake, and tetany too.

Q. But it also can be and usually is due to the intake? A. That is the most common cause.

Q. And if a mother got ahold of this advertisement here in Life and concluded from that that the evaporated milk these advertised provided a complete diet for a ten-day old infant and without consulting a pediatrician used it in its naked form, that would be one of the dangers that would result? A. That is right (T. 1301).

Re-Direct Examination by Mr. Morris.

Q. Doctor, mother's milk does not have the optimum requirement of Vitamin D, does it, nor cow's milk, whole milk, as well as (T. 1301) evaporated milk? A. There are statistics that indicate that under rather poor hygienic

conditions from half to two-thirds did develop and discover that evaporated milk could be used along with these various necessary supplements in the most efficient manner and did provide as nearly an adequate diet as you could think of? A. Yes.

Q. Now, reference was made to 'Infant Nutrition' by Marriott and Jeans. I suppose you are familiar with this book? A. Yes.

Q. Is there any comment you have to make upon the question of substitution of proprietary foods with reference to the necessity for them at the time they were first developed 20 or 30 years ago, when the idea was first developed? A. Well, I think proprietary foods are much less needed now than they were formerly. For one thing, I think one of the reasons that they contained some measure of popularity 25 or 30 years ago was because in their preparation and especially to prepare them so as to have a keeping quality so they wouldn't spoil, they were rendered sterile, and I think a lot of the apparent superiority of such preparations over ordinary milk formulae obtained at that time was due to that one point that in one case you were feeding sterile food which would not give rise to dysentery and other diseases of the intestinal tract, and in the other instance you were not. Now, that is only one of the so-called four essentials, freedom of harmful bacteria, which good feeding has to meet.

Q. Was that point cured in the handling of milk? A. It has been taken care of in a number of ways in the handling (T. 1303) of milk. The laws that govern Pasteurization perhaps, were the most important ones, and then in the preparation of evaporated milk, the heat treatment renders such milk free from harmful bacteria.

Q. What were the other three points? A. One concerns digestibility. The second concerns the content of the food from a qualitative point of view so that all essential elements would be there, and the fourth from a quantitative point of view, the energy requirements, and perhaps—I would like to say something here to amplify it. When these four points were laid down, they were laid down for just this purpose: to simplify the teaching of infant feeding to medical students, and when, for instance, under point number two it was mentioned that an adequate infant diet should have enough fat, when that statement was made, the only thought about fat at that time was that fat supplied many of the calories, approximately half of the calories or half of the energy, and nothing was known about the essentialness of some of the fatty acids which might be likened to vitamins; for instance, and even with this newer knowledge, not so much is said about that.

Q. Was there any point about digestibility at that time that is not so important at this time? A. Well, some 25 or 30 years ago when an infant would develop vomiting and diarrhea and suffer nutritionally, it wasn't always easy to demonstrate whether such digestive upsets were due to faulty diet in terms of quality or quantity of food or due to contaminating bacteria, and when once this latter point was controlled and food was fed free of harmful bacteria that was the biggest step forward in reducing the incidence of such digestive symptoms as vomiting and diarrhea.

Q. Doctor, I believe you were asked about whether an ignorant (T. 1304) mother got ahold of some particular food that was deficient, if it might not result in the baby

having rickets or some other deficiency. Now, for that very reason isn't it advisable to put into the market only those foods which contain as nearly as possible the most nutritional value? A: Yes, I think that is an excellent reason for that. That is why, for instance, white flour is being enriched now with some thiamin.

Q. Then if a mother was ignorant, which would you prefer that she get ahold of and feed to her baby, Milnot or evaporated milk? A. Well, I would think certainly I would rather have her have evaporated milk.

Re-Cross Examination.

Q. Why? A. For this reason: while it has not yet been proved without doubt that for the human certain fatty acids are essential, it certainly has been so proven by animals, and the work alluded to earlier in the rats by the Wisconsin group and the calves by the Minnesota group, demonstrates I think quite clearly that there is something in butterfat which is not present in the vegetable oils which has a very definite place in nutrition.

Q. You say that hasn't been proved beyond doubt? A. For the humans.

Q. But it has been proved beyond doubt, hasn't it, Doctor, that evaporated milk without some sort of supplement fed to an infant will result in the condition pictured in the exhibit that I offered in evidence? We know that, don't we? A. That is all right. That is correct (T. 1305).

Q. We don't know the other, isn't that right? A. That is correct.

Q. We know an evil that would result from this is no supplement was used that is as terrible as indicated by that picture, and you would put that up against some-

thing we don't know, whether it exists or not. Do I understand you to say that? A. Well—

Q. You don't mean to say that? A. Here is what I would like to point out to you. It hasn't been proven yet that certain unsaturated fatty acids are absolutely indispensable in human nutrition. Feeding of Milnut and Carolene may constitute just such a proof.

Q. All right. We have— A. On human experimentation.

Q. We have two powders here. One we have tested and know is poisonous. The other one we don't know what is in it. You know one is certain ruin and the other one you don't know. Which one would you take first? A. Well, is that a fair question.

Q. Yes, sir, that is a fair question, I think. I want it to be fair in the light of your answer. A. Is something poisonous because it lacks something?

Q. I am asking you that question. You wouldn't put up a product you were uncertain as to whether it was injurious and say, "Don't take that but take a thing that is certain to result in ruin"? A. That is correct. I would like to go that one better, though. I would like to say this: I certainly would not agree to use in babies, in human beings, something that is still experimental, when I have something that I know how to use successfully very easily.

Q. That is your own personal experience in the matter? A. That is everyone's experience, really.

Q. You know there is no experience to the contrary, no experience (T. 1306) that these proprietary foods are satisfactory? A. No, but you don't bring out what additions are made to these proprietary foods for the successful rearing of babies.

Q. Well— A. Just the same additions are required for them as are required for the evaporated milk.

Q. I will get back to Mr. Morris' question. Take a product from which the butterfat has been removed and something else put in the place of it and other ingredients added. You wouldn't say that that hasn't been successfully used in this country? A. I don't quite get your question. Will you please reframe it now?

Q. Well, I think you understand it, Doctor, but you say that the progress of infant feeding has been over a period since 1922 or 1923? A. Oh, it has been much beyond that. That is the time that I myself have been interested in it.

Q. When did the fact become known that you could supplement foods with vitamins, that you could fortify foods with vitamins? A. That has been a gradual evolution.

Q. A gradual evolution. Now, when you first began the feeding of infants were they using skimmed milk or condensed sweetened skimmed milk? A. They had been using sweetened condensed milk.

Q. That was wholly deficient in Vitamins A and D? A. No, not wholly deficient. That was simply evaporated but with so much sugar added.

Q. Wasn't the fat taken out of it? A. Not sweetened condensed; just about 50% cane sugar added.

Q. What was Eagle Brand? A. That is it (T. 1307).

Q. You are sure there is butterfat in it? A. Sure there is some butterfat in Eagle Brand milk.

Q. How much? A. I am not certain.

Q. You are sure of that, though? A. Of course.

Q. Now, you say that, over the period of your practice from 1922-23 down to the present time, there has been a gradual falling off in infant mortality? A. Right.

Q. And you attribute that to the progress that is made in nutrition? A. Yes, plus the control of infection.

Q. Part of that progress has been due to the fact that you have found ways of feeding the sickly infant that couldn't tolerate butterfat; you have found other ways of feeding it? A. No, that is something I didn't say. I mentioned that such preparations are used for allergic babies. Now, allergic babies don't often die of their conditions. They have an itching skin. They get hives. They may have some abdominal distress. They may be cranky, colicky babies but they don't die of those conditions.

Q. But allergic babies must have the same nutritive food as babies who are not allergic must have? A. Exactly, and you often come to this conclusion finally: it is much better to put up with the allergic phenomenon and keep that baby in good nutrition by going back again to the accepted way of feeding him than trying all of the various proprietary substances just from the standpoint of trying to control the allergic condition at the expense of suffering on the part of nutrition on the part of such a baby. Did you get that? I mean that is very important.

Q. I didn't understand you here in discussing point two under the requirements of a satisfactory artificial feeding. Point two (T. 1308) says: 'Sufficient protein, carbohydrate, fat, mineral salts, water, and vitamins.' What was it you said about the fat? A. I said that when that statement was first made, the only thing that was as-

sociated with 'fat' was its caloric value, and subsequent animal studies pointed to the possible need in the human for essential fatty acids.

Q. Do I understand you that that statement is outmoded, out of date? A. Not at all. That is, you simply always recognize both the quantitative and qualitative aspect of foods.

Q. So that Dr. Jeans when he accepted that statement in this last edition of this book in 1941 was still up to date, was he? A. Let me put it this way: If Dr. Jeans or anyone else with those same four cardinal essentials of nutrition were to be given pure chemical substances and mixed them all together in exactly the way he thought they should be mixed, they wouldn't work.

Q. Well, of course, there is no question of that sort here. A. Because they never have worked in animals.

Q. But you don't mean to say that Dr. Jeans is carrying forward something that is outmoded when he makes that statement? A. Dr. Jeans has to teach students the same way that we do and you have got to start some place when you try to get the fundamentals before the student, and those are the fundamentals and they are so broad that every time something new is added it can be added and put in there.

Q. It can be put in there? A. That is right" (T. 1309).

Re-Direct Examination.

On redirect examination the doctor stated he was familiar with the pamphlet published by the Children's Bureau, U. S. Department of Labor, on the subject of feeding and taking care of babies; that it is available to all

mothers; that there is no statement recommending the use of vegetable oil in place of milk for the child (T. 1310).

DR. PAUL J. ZENTAY.

(T. 1313-1327.)

Direct Examination.

Paul J. Zentay testified that he lived in St. Louis, and was a physician and pediatrician; that he was educated in Europe; that he completed eight years in the so-called gymnasium, then went to the University of Kolozsvár in Hungary and obtained his degree of M. D. in 1914. That he was a member of the St. Louis Pediatrics Society, the St. Louis Medical Society, and automatically with the A. M. A., certified by the American Board of Pediatrics; that he had been engaged in the practice of pediatrics since 1919, and had been Assistant Health Commissioner of the city of St. Louis in 1933-34, and before that he was clinician for the State Department of Health of Maryland, in the Bureau of Child Hygiene; before that he was the medical director of the American Red Cross in Hungary and organized the child health program and supervised and was also medical director of the American Red Cross in Greece and directed the relief of refugees of the American Red Cross there. (T. 1313).

That he was secretary of the St. Louis Milk Commission; now called the American Milk Commission, Pediatric Society since 1926, and had been president of the American Association of Medical Milk Commissioners in 1933-34, and was still a member of the council of the same organization.

That the American Association of Medical Milk Commissioners is a federation of all of the American Milk

Commissioners that supervise the production of certified milk, and the council directs the affairs of the organization; that the purpose of certified milk was to produce the highest milk as far as standards of milk production, purity and quality of the milk is concerned; that its purpose was to promote public health and improve the quality not only of certified milk but the milk industry in general (T. 1314).

That he was connected with the Medical School of St. Louis, and was an instructor in Pediatrics and Clinical Neurology; that in addition to his work there, he carried on a private practice, and did some teaching in the Children's Hospital, and was also pediatrician and neurologist for the St. Louis Shriner's Hospital for Crippled Children; that he was teacher at Washington University.

That he had not conducted research studies in biochemical or animal experimentation; but he had made studies in pediatrics in the hospital and in his own practice with regard to children (T. 1315).

"Q. Have you studied cow's milk in its various values in infant feeding? A. I have done it all along and talked and published on that subject, particularly at the meetings of the American Association of American Milk Producers.

Q. Cow's milk has been used in the feeding of babies for a long time? A. Well, as far as our knowledge goes, back so far as since the human race became civilized enough to have cows.

Q. Has it required years of experience and much clinical research to establish the adequacy and usefulness of cow's milk for infant (T. 1315) feeding? A. Has it required a lot of experience?

Q. Yes. A. I think it certainly has, and it is what we know today as the cumulative experience of the ages.

Q. What is the result of this long experience by medical men in the use of cow's milk? A. What is the result?

Q. Yes. A. The result, stating it very briefly, is that no practicing pediatrician or practicing physician, general practitioner or whatever the specialty happens to be, would be willing to substitute there for human milk, when substitution is necessary, anything, practically, but cow's milk.

Q. Do infants fed cow's milk grow and develop normally? A. Most of them do, with the exception of some pathological conditions.

Q. Well, do normal babies grow and develop all right? A. Normal babies, I should say, almost 100% grow and develop normally if fed cow's milk in sufficient quantities, up to a certain age.

Q. That is, 'up to a certain age' is during the critical period? A. What I mean by that, that exclusive cow's milk feeding would not be sufficient for an infant beyond about three or four months of age, and therefore all of us—I personally start them on additional feedings in the form of cereals as early as three months and sometimes before that, and then vegetable and other items in the diet, fruits, and so on, are added, so if you ask me that, how long, how far an infant is fed exclusively on cow's milk, I naturally have to qualify it.

Q. But you find the same conditions with regard to the child and feed these additional things when the child is nursing the mother? (T. 1316.) A. Yes. That applied because even if the infant is breast-fed, about the same age we start the additional items in the diet.

Q. And do they mature with no signs of deficiency or malnutrition? A. Well, most of them. There are, of course, a few exceptions where even with the addition of all kinds of items in the diet that we discover occasionally certain deficiencies.

Q. What are those deficiencies in those cases? A. I am thinking particularly of rickets. It happens quite often in our practice where we claim that we pediatricians have a fairly good knowledge and keen eye for rickets that infants who are fed on enormous quantities of Vitamin D in the form of cod liver oil or different concentrates, that in spite of that, will develop rickets. I believe that here there are certain factors that are not entirely clear to us that you could call constitutional factors, that there are certain deficiencies probably in the make-up of the infant and just simply by adding certain things to the diet probably you can't correct them in short order. It takes quite a long time and large quantities of vitamins before much deficiencies can be corrected, but they are very, very rare in the large number of babies under our care.

Q. Has it required a long time to establish these facts? A. Why, it certainly has. Naturally, the science of vitamins particularly has developed during the last 20 or 25 years. Before that our knowledge was extremely limited.

Q. Do you think it advisable to forsake cow's milk for an untried compound for infant feeding? A. Naturally, everybody who has studied infant nutrition—and I should include not only infant nutrition but the nutrition of older children and even adults—(Tr. 1317) would state that cow's milk is the ideal food, the only food that can be considered, with certain limitations, as the perfect

food, and therefore nobody who has any basic knowledge of nutrition would be willing to forsake or even temporarily eliminate cow's milk from the dietary of infants and children or even grown-ups.

Q. Would your opinion be the same even if there were no reason to suspect that the untried compound were not nutritionally adequate for the purpose? A. Will you repeat that, please?

Q. Would your opinion be the same even if there were no reason to suspect that the untried compound were not nutritionally adequate for the purpose? A. Well, all we know is that cow's milk is adequate and an ideal food and therefore to supplement something that is unknown to us certainly would be more or less a foolhardy or crazy thing to do.

Q. What if the nutritional research on animals had shown that the compound sought to be substituted was inferior to milk? A. Well, we all are accustomed nowadays to rely upon animal experimentation in the field of nutrition because that is the only sensible and rational way of going about it. Any new discovery in the field of nutrition actually has been done during the past 20 or 30 or 40 years by animal experimentation through the work of the biochemist in the laboratory and therefore unquestionably that is our main standby when we make our decisions. Naturally, we try to apply the knowledge gained thus to the feeding of human beings.

Q. Are physicians generally considered to be authorities on matters of nutrition? A. I wouldn't say in general, but certainly those whose main work is concentrated or directed toward the feeding of infants and children

and probably digestive orders can (T. 1318) be considered as authorities on human nutrition.

Q. On whom do the medical profession depend for knowledge and discoveries in the nutritional field? A. Naturally, in the nutritional field as in practically any other field we look to the laboratory for guidance because now-a-days an average practitioner is just not in the position to acquire all of the information that is needed.

Q. In other words, you rely in that branch upon the biochemist? A. The biochemist or nutrition workers in the laboratories.

Q. Then the biochemist does evaluate dietary changes before the physician ordinarily will apply them in the practice of medicine? A. That is the usual course of affairs.

Q. Does this apply to infants and children? A. Yes, just the same.

Q. Are you familiar with the research which has been conducted in the field of animal nutrition on the comparative nutritive value of butterfat and vegetable oils? A. I have read those articles in which, of course, it is stated that certain animals—Dr. Elvehjem and Hart and others who published a few articles on the subject.

I am not entirely familiar with the literature, but the few articles I have read seem to prove that animals fed on dietary that lacks certain elements like butterfat don't show the same rate of growth and the same quality of development as other animals that are fed on whole milk.

Q. What in your opinion is the conclusion to be drawn from this research work done by these men? A. Well, in analogy to similar work in the field of nutrition,

you might say that if rats and other animals fed in that manner do not thrive well on substitute food that takes the place of butterfat or whole milk, that you would be (T. 1319) hesitant to feed such food in human infants or human children.

Q. Are you familiar with the defendant's product, Milnot? A. I just know the can. I never tasted it. I haven't used it, naturally, in my own practice.

Q. You understand it is a compound of skimmed milk, hydrogenated cottonseed oil, Vitamin A of 2,000 U. S. P. Units and Vitamin D of 400 U. S. P. units?

A. That is right. I know that.

Q. And you know in a general way how it is prepared and what it contains? A. Yes, I do.

Q. Based upon your knowledge and experience, would you say that the defendant's product could safely replace whole milk in a diet of infants and children? A. I don't think so. At least, I wouldn't like to feed it to my own children or my patients.

Q. Would the wide use of the defendant's product for this purpose involve any risk to the public health?

A. That is, I think, an important point. Now, when we talk about a milk product, that after all plays an important part not only in infant feeding but in the feeding of older children and even adults. There the public health importance of the food product comes in, and I feel that all of us who are interested in obtaining for general use an ideal milk product would be horrified to know that all that work would go to pieces and that the place of wholesome and ideal milk would be taken by some substitute. And I am sure that not only practicing physicians but public health officials would object to such development.

Q. And the reason for that is based upon the fact that you know whole milk is beneficial from a nutritional standpoint? A. Well, we all feel, and all the public health officials everywhere, the Public Health Officials Association and everyone else who (T. 1320) is concerned with the problem of public nutrition, all advocate the use of whole milk for children and adults. Some of them advise that everybody should, even an adult should drink at least a pint or a quart of milk a day in addition to the food otherwise consumed, and, in view of that, we naturally would like to know that the kind of milk that they drink is really the best that is available on the market.

Q. Would your opinion be the same regardless of whether any other vegetable oil was used other than hydrogenated cottonseed oil in the product instead of the present hydrogenated cottonseed oil? A. Well, I think it applies to practically any substitution taking the place of butter, butterfat.

Q. In your opinion would the prohibition of the manufacture or sale of such a product in the state of Kansas be a protection to the public health of the state? A. I am certainly convinced that it would be desirable that anybody who buys milk should get whole milk and there shouldn't be any form of substitution, and I am sure that such a procedure would benefit Kansas or any other state or any community in the United States.

Q. From the public health standpoint? A. From the public health point of view.

Cross Examination by Mr. Clark.

Q. You speak of whole milk. Do you disapprove of the use of skimmed milk in the human diet? A. In cer-

tain conditions where for dietary reasons we use the skimmed milk, there is no objection to using that, but when we talk about the point of view (T. 1321) of general use of milk, naturally, we advocate whole milk instead of the skimmed milk.

Q. You object to the use of skimmed milk generally in the human diet? A. Yes, for general use we wouldn't like to see it because it would take out quite a good amount of the nutritional value of the milk and for the amount of money that you pay for it, you would like to have all that milk supply.

Q. Why do you put in the amount of money that you pay? A. I mean from the economic point of view. We doctors are also economists and sociologists.

Q. I read to you from Sir John Orr, author of 'Food, Health and Income' and adviser to the British Ministry of Health, who, in November, 1941, made this statement: 'We are determined that, at whatever cost, the health of the children in Britain shall not suffer from the food shortage. After wheat and fats I would put dried milk, either whole or separated, first on the list of imports. If you can fortify it with appropriate vitamins so much the better.' Do you disagree with his idea that he ought to try to feed the starving children of Europe with skimmed milk? A. No. But you mustn't forget you are dealing with an emergency situation and the main reason for that statement is the shortage of shipping space and therefore they want, naturally, dried milk because that is the easiest to ship from this country.

Q. But dried skimmed milk, isn't it? A. Skimmed milk because it is easier to dry than whole milk.

Q. Do you disapprove of the activities of the United States Government in the encouragement of the use of skimmed milk in the diet? A. No, with certain limitations. Certainly it is better to use (T. 1322) skimmed milk than no milk. We all agree on that.

Q. That is right. There is a shortage of the food factors of skimmed milk in this country? A. That is right.

Q. If you can't get any whole milk, you should get the factors used in skimmed milk? A. Yes, I say if the choice is between no milk or skimmed milk, then I will take skimmed milk. That is the point.

Q. I see. It is all relative then. If a family can afford to buy whole milk, you would prefer that they buy it, but if they can't, they better buy skimmed milk? A. It is relative, but if you consider it from the point of the optimal health and optimal development in the family, particularly children in the family, then you would certainly choose whole milk.

Q. Suppose you had the money to buy the skimmed milk and didn't have the money to buy the whole milk; you would buy it? A. Yes, sir.

Q. If you could get fats added, you would prefer that rather than to buy no milk? A. If the choice is between no milk and skimmed milk.

Q. And if the choice is between this product and no milk, you would take this product? A. Which product?

Q. The one in question here. A. Well, no, because the question would be whether in that same community, for my point of view as a doctor, also as a socially-minded individual, which after all you have to consider the economics of the family, the question would be in that

same community for the same price, whether whole milk is available or not. That would be the determining factor.

Q. Suppose at the same price the whole milk wasn't available? (T. 1323.) That is, you didn't have the money to buy it and you had the money to buy this product, then you would say use this? A. Of course, that is a situation that, as far as I know, doesn't exist in this country.

Q. Well, you would say that, wouldn't you? A. Well, I say it would be some better in a place, theoretically speaking, where whole milk would not be available. I don't know—on an island or somewhere where some unforeseen or unusual necessity arises, of course, I would take it, just the same as I would drink even dirty water if I had to.

Q. Doctor, aren't there thousands of children in this country who on account of the financial status of their family are unable to buy this certified milk that you talk about? A. Yes, but that is only one-half of one percent of the whole milk production of the country.

Q. I understand, but it is more than one-half of one percent of the population of this country? A. Of course, certified milk never was intended for general consumption because it is economically impractical.

Q. Then the milk that we have for general consumption, the whole milk, there is a large part of our population unable to furnish that to the children? A. Yes.

Q. That is true, isn't it? A. Well, what happens actually and practically all over the United States, that the quality of the so-called commercial milk, the market milk has grown, has gone up so tremendously that the

market milk today is about as good as certified milk was about 20 or 25 years ago.

Q. For what does it sell? A. Some places ten, fifteen cents (T. 1324).

Q. Here in St. Louis it sells for fifteen cents today, doesn't it? A. Yes.

Q. How many quarts in 100 pounds of milk? A. Well, I would have to ask somebody.

Q. Well, there are 48. A. I don't know that exactly.

Q. That would be something like \$6.40 a hundred pounds that the consumer here pays for milk? A. Yes, sir.

Q. Now, if the family couldn't buy that milk, you would prefer to see them use skimmed milk if they couldn't do better? A. Skimmed milk—as far as I know, practically every place in the United States there is a substitution available in the form of evaporated milk.

Q. Why then does the Government spend so much money and so much time and so much effort in urging the use of skimmed milk by the people of this country? A. I don't know that the Government is urging the use of skimmed milk. The Government is urging the use of skimmed milk now, as far as I know, particularly for the relief of Great Britain. That is the main purpose.

Q. You haven't kept up with it sufficiently to know that they are advising its use? A. Urging its use where whole milk is not available. If the community cannot supply whole milk, then they urge the use of skimmed milk but not—no Government agency so far as I know has ever advocated that skimmed milk should be substituted for whole milk, certainly not any agency that is concerned with the health of children.

Q. Doctor, what is certified milk? A. Certified milk is a milk product that is produced in certain dairies called Certified Dairies under the supervision of the American Milk Commission that is locally under the direction of either the Medical Society or the Pediatrics Society (T. 1325).

Q. The standards are fixed by ordinances? A. No, the standards of certified milk are fixed by the Association and are called Methods and Standards. Every year we meet and adopt amendments to the Methods and Standards.

Q. Don't you seek to have them written in the ordinances? A. Usually this is what happens: for instance, the Standard Milk Ordinance which is sponsored by the United States Public Health Service contains a paragraph recognizing certified milk, any milk that is produced according to the Methods and Standards of the American Milk Commission. That is all it contains, and if the Health Commissioner or whoever writes the local milk law wants to incorporate the entire text, that is his privilege.

Q. Do you know how many cities in the State of Kansas provide certified milk for its people? A. Very few. In Kansas there is, I think, only one or two certified dairies.

Q. Only one or two in the whole state? A. Yes. Well, I said before that the purpose of certified milk has always been more educational than anything.

Q. And it is to provide proper milk for the feeding of infants? A. Yes, it is, if it would be available to all. We would all like to see that, that milk of the quality of certified milk would be fed to all infants and children in

the United States, but unfortunately that is not practical. We would even like to see evaporated milk made of certified milk because certainly that is milk of the highest quality where even the diet of the cow is very carefully supervised (T. 1326).

Q. Doctor, I read to you from Bulletin 105, United States Department of Agriculture. A. Yes, sir.

Q. On the skimmed milk question. "Dried skimmed milk has improved the diet in thousands of homes and in many institutions where only a limited amount of money could be spent for food. It has been used with remarkable success in the prevention and cure of pellagra. The concentrated nutritive value of dried skimmed milk along with the ease of shipping and storing and its low price in wholesale lots makes it extremely valuable to welfare and relief organizations feeding large groups in times of emergency." Are you acquainted with that statement? A. Yes, I stated that before.

Q. You agree to all that? A. It always states "emergency situations."

Q. What is the emergency about that? A. Flood or some catastrophe befalling. That is what they state.

Q. Is this emergency, "Dried skimmed milk has improved the diet in thousands of homes and in many institutions where only a limited amount of money could be spent for food"? A. Yes, that is what I say.

Q. Is that emergency, not having money enough to buy food? A. Not normal conditions. I am talking about the families. Of course, institutions where limited funds are available if they buy that—if they cannot buy whole milk, I certainly would advise them to buy skimmed milk.

Q. Hasn't the condition always existed that there are some families that didn't have money enough to buy certified milk? A. Certainly, but I say those are all not normal conditions" (T. 1327).

DEFENDANTS' REBUTTAL EVIDENCE.

DR. ANTON J. CARLSON.

(T. 1768-1789.)

Direct Examination.

Dr. Anton J. Carlson whose testimony in chief is found on pages 102-113 hereof, testified in rebuttal with reference to the use of defendants' product as a baby food as follows:

"Q. In coming to the conclusion that you have not changed your opinion, have you given any consideration to what Dr. Hartmann and Dr. Zentay said about this matter? A. I have. I listened to their testimony. I have known Dr. Hartmann for many years and he did not testify, as I recall, that this was not a wholesome product even for infants. He couldn't very well say that on the face of the fact that particular infant foods not very different from this have been successfully used for rearing thousands of babies in the past, and Hartmann himself testified that he used these artificial mixtures containing vegetable fats and little or no butterfat, particularly for sick infants. If they can take it and do well, obviously well infants can take it. He did say that he preferred modified milk. Well, there are a great many formulas for successful feeding of infants, I know, although I am not a pediatrician.

Q. And as I understand you, some of those formulas are made from a product similar to the one in question

and other formulas are made from whole milk and others from evaporated milk? A. The only real issue here, so far as this baby feeding is concerned, is this, the issue raised by the Wisconsin experiment: is there any form of fatty acid in milk, human or cow's, that is a specific stimulus of growth at the early stage of infancy? That is a suggestion and conclusion. They don't conclude it entirely; they say it looks like it. Now, that is, so far as the data at present goes, nullified by human experience. Hart and Elvehjem, whom I know well and have known for years, they, of course, point out in their own experiment at the end of six weeks the rats had caught up. Some of them, of course, never were behind, but those that were behind caught up. Well, now, we have got to be a little careful in putting minutiae into variations in growth or total growth as a measure of health. You can get growths in man up to six, seven, eight feet by excessive stimulation of the pituitary gland, produce excess growth hormones, but those giants are not superior humans, my friends. They are inferior, all that I have seen. Some children stop growing when they are five feet-three, others go to six. The measure of brain or even physical efficiency is not made by the perpendicular entirely, and we know in the case of children that those who grow a little slower the first year or two may show a spurt at early adolescence that is such a variable. A scientific experiment even on the rats should have been carried to the point of the end of growth. What is the size attained there? And before you draw any such conclusions as were hinted at as a possibility in the experiment at Madison, you have got to determine, particularly at the end of three

weeks, six weeks, how much was fat and how much was growth in those rats, because adiposity is not growth.

Q. Then as I understand you, to draw any real conclusion from the experiment in that regard, there should have been examination of these rats; they should have been killed and examined to determine what had happened to them? A. I would have done it. Now, Elvehjem is an experienced investigator, one of the best in nutrition in the United States, and if he actually observed those rats, you can get the impression as to size, to be sure, but where the difference is small, I would have certainly made total fat analyses on comparable specimens. As a matter of fact, in my correspondence with Dr. Elvehjem, he admits that point" (T. 1768-1770).

Re-Cross Examination.

On recross examination the witness testified that he did not say that he recommended a mixture of skimmed milk and vegetable oil to be substituted for whole milk in the diet of infants. He said:

"A. Well, in the first place, I don't control diets of infants. If it was a case of one or the other, if that is what you mean, or if it was a case of—of course, idiosyncrasies as to the fats, that would have to be eliminated—we are assuming now that the children could handle either equally well. If it was a case of poverty, of being able to buy three cans of Milnot as compared to two of condensed whole milk, evaporated whole milk, I certainly would recommend the Milnot.

Q. You would recommend what? A. Milnot, for the reason that there is, on the whole, 10%—I believe that is stipulated in the record—there is 10% more solids than in the average evaporated or condensed milk, and there

is whatever factor of safety there is in the uniform higher content of Vitamin A and D. If it comes to an extreme, there would be a factor of safety in Milnot, and I would do the same if I, for example, had the choice between evaporated milk and Milnot, either one available, three cans a day for 100 days and nothing else, I will take my chance on Milnot and travel farther on it because of that small factor of difference of 10% in important nutrients; but under ordinary conditions of life, it wouldn't make any difference, much difference, which one the pediatricians advise or the mother feeds, if I have made myself clear" (T. 1789).

That he said this without any experience in the feeding of this product to infants himself.

"A. I don't have to have experience with feeding of people on a digestible fat. I know something about the energy value, the digestibility, and the value of the protein, and the safety factor, when you are going to an extreme and you are on the brink, the safety factor of a difference in 10% in the proteins.

Q. Then do I understand you to say that digestibility and the protein and the energy value of a food is the answer to its nutrition? A. That is part, yes; that is important.

Q. That is the important part. A. That is one of the important parts. Its inorganic salts and its vitamins are also important, but you have more inorganic salts in Milnot than you have in evaporated milk, and you have more constancy of Vitamins A and D in there" (T. 1789).

DR. BORDEN'S. VEEDER.

(T. 1811-1822.)

Direct Examination.

Dr. Borden S. Veeder testified that he lived in Clayton, Missouri, and maintained an office in St. Louis, Missouri. That he was a physician and pediatrician and, with reference to his qualifications, he stated:

"I was graduated from medicine at the University of Pennsylvania in 1907. After hospital training at the University Hospital, I studied abroad, Berlin. I then returned to be a teacher in the Department of Pathology at the University of Pennsylvania until 1911. During that time, I was particularly interested in children's work, was pathologist to the St. Christopher's Hospital for Children. In 1911 I went to St. Louis to help organize the Reorganized Washington University Medical School in the Department of Pediatrics. I was head of that department and organized the department, stayed there until 1917, when I went abroad with the Army for two years. On my return I took up the practice of pediatrics in St. Louis and have been a practicing pediatrician ever since.

"In the Washington University Medical School I was an instructor, an assistant professor, and in 1919 became Professor of Clinical Pediatrics, the position I now hold. I am a member of the American Medical Association, was Chairman of the Section of Diseases of Children about 1923 or 1924, I have forgotten the exact date. I am a member of the American Public Health Association, American Pediatrics Society, of which I was President about eight years ago. I was President of the American Board of Pediatrics from 1933 until last year, when I resigned to become President-Elect of the American Academy of Pe-

diatrics, of which I am now President-Elect. I am a member of the American Association for the Advancement of Science, International Association for Pediatrics and Preventive Pediatrics. I am on the National Board of Medical Examiners" (T. 1812).

That he was also editor of the Journal of Pediatrics and had been since it was founded in 1932; that the Journal has the largest circulation of any pediatrical journal; that to the best of his ability he had kept up with the literature and the progress and the science of pediatrics and feeding of infants; that his duties as editor required him to read all of the manuscripts that are submitted to the Journal for publication, probably about 250 a year, of which they publish about 150; that all of these were first read by him and he decided whether they were acceptable based on whether they were scientific, whether the work was good, whether the work was of interest.

That he had read the testimony of Drs. Hart, Hughes, Elvehjem, Hartmann and Zentay in this case, and the testimony of Drs. Harris and Carlson given on June 4th; that from the reading of the testimony, he was acquainted with the product under consideration, Milnot, and that he had also examined the product (T. 1813).

"Q. Doctor, what is your opinion as to the usefulness, wholesomeness, nutritiousness, of this product in question here as being a fit and suitable food for the feeding of human adults, children, and infants? A. It is perfectly satisfactory.

Q. After reading the testimony in this case, is there any difference of opinion between you and the witnesses there as to that subject? A. Not that I can read into the testimony.

Q. Why do you say that, Doctor? A. Well, because it seems to me that the only point that has been raised about this food in the testimony, that it might be unsuitable, is that there are certain products of butterfat that are essential to good nutrition. These are based on rat experiments concerning which there seems to be in the testimony, as I have read it and heard it, considerable difference of opinion; and, further, as a pediatrician, I do not believe that one can transfer results obtained on feeding rats different foods, to the human being. On the other side of the question there is long evidence that foods containing vegetable oils have proved very satisfactory in feeding infants, not only well infants routinely, but in feeding premature infants. That goes back a long way. I have been familiar with it for 25 years. The first person that I ever heard of using it was Dr. Maynard Ladd of the Harvard Medical School, who, back in, I think it was the Lakewood meeting of the American Pediatrics Society in 1915, presented a number of cases of babies where he had used olive oil as a substitute for butterfat with uniformly good results.

"Now, about that same time Dr. Gerstenberger, whom I have known for many years very closely, was interested in developing a universal food, as he termed it, that was foolproof, that anyone could feed a baby, and that was the origin of S. M. A. I was familiar with that work before it was tried experimentally, when it was tried clinically, when it was in purely an experimental state. I was interested in watching the results that he got in Cleveland with feeding that milk, and it became not only clinically satisfactory because I think it was in 1919 that he reported before our society that a great many cases had been suc-

cessful. Now, since then it has been used commercially by a great many doctors. I have seen a large number of babies who have been raised on S. M. A., and they have, so far as I could ascertain in any way, been as healthy as any baby that I have ever seen raised on cow's milk dilution.

"Then after that there were two other foods came in, Similac and Reolac. I have had no personal experience with them, but I know people who do use them and find them very satisfactory.

"Then in, oh, I guess it was about 1935—I can give you the exact references—Dr. Holt sent me his manuscript to read on fat studies, which I think is one of the best pieces of work that has ever been done on the utilization of fats and the values of different fats in infant feeding. I accepted that immediately for publication in the Journal, although it was far more extensive or a longer article than we usually accepted or published. Then a little later than that Dr. Blatt here in Chicago sent me a paper from his studies on Olac, which is a skimmed milk-olive oil mixture, and it was quite remarkable the results that he obtained in feeding premature infants, which are the most difficult type of infants we have to feed. Since then, that has been on the market and has been used in hundreds of cases to my knowledge.

"So it seems to me, and I have never in all my reading or in the literature known of any references where the use of a vegetable oil as a substitute for butterfat has been shown to be unsatisfactory by anyone. Then after Dr. Blatt's paper, Dr. Frontelli of Italy sent me a manuscript showing me he had been using olive oil as a substitute for a great many years. Now, all of these were

carefully checked studies. They weren't simply the studies of somebody saying, 'I have used it in 100 cases and it is satisfactory.' That, of course, is not scientific, and we would not accept such an article as that, but all of these had carefully controlled charts. So knowing that vegetable oils may be substituted with absolute safety in the feeding of an infant, and knowing that they are being used constantly by the pediatricians, together with the fact that there is nothing that I know of to show—except this thing that I have referred to, these rat experiments where there might be something missing—it seems to me that there is no difference of opinion among pediatricians as to the suitability of a vegetable oil fat being used as the basis, naturally, upon which an infant's feeding formula is built. Of course, in all of these things, milk only forms the basis, or it is a food of this type that forms the basis. It must be supplemented, as has been brought out here many times before" (T. 1817).

Cross Examination.

"The witness testified on cross examination that he had used Olac; that he was a practicing pediatrician as well as teacher, but did not undertake to say how many babies he had under his charge at the time; that at present he had no children on Olac and was feeding evaporated milk as a basis of their food (T. 1817).

"Q. Now, did I understand you to say that you did not disagree with these men, Hartmann, for instance?
A. Well, I didn't read anything in Dr. Hartmann's testimony against the wholesomeness or the value of vegetable oil foods. Dr. Hartmann to my experience or my feeling in his testimony expressed a preference. Now, most of us have preferences. These preferences, for example,

vary according to what part of the country you come from. In St. Louis a good many of the men use evaporated milk as a basis; other men use whole milk diluted. Some add acid to it and some do not. Dr. Marriott has been an advocate of adding acid to it. I think his explanation of that was wrong. If you take in the East, you probably will find that they will use diluted milk. I know some men in New York use evaporated milk and others use whole milk. I know others who use this type of preparation like S. M. A. and Similac and Reolac.

Q. What is the comparison between this product and S. M. A.? A. And S. M. A.? They both have as a basis, as I understand it, skimmed milk, the proteins of skimmed milk, to which a vegetable oil has been added of some kind.

Q. Anything else added to S. M. A. besides a vegetable oil? A. Yes, that has been changed, the oil, several times. I mean the S. M. A. product has been changed. For instance, originally Dr. Gerstenberger tried to add Vitamin C, but the milk didn't keep very well with that, as I understand it, and so that was taken out, I think. Then he has always added a certain amount of fish liver oil for its Vitamin D content.

Q. There are a number of things added in S. M. A., aren't there? A. I think some of the original—just what is in S. M. A. now I do not know except I know that the butterfat is taken out and other oils are substituted for the butterfat.

Q. Doctor, you don't use S. M. A. or Olac as a normal diet for a normal child, do you? A. I don't, but a lot of other pediatricians do.

Q. You mean use it exclusively? A. Yes, I have had some perfectly beautiful babies that have moved from

St. Louis to Cleveland, five, six, seven, eight months of age, who have been on nothing else but S. M. A. They have been in perfectly satisfactory shape and I continued to leave them because I could see no advantage of changing.

Q. I understood you to say you couldn't see any difference as to your position and as to Dr. Hartmann's position in reading his testimony? A. No, because Dr. Hartmann's is one of preference; that is, in relation to the question that was asked me as to the wholesomeness of the food.

Q. I am going to read a question that was asked of Dr. Hartmann and read you his answer. Then I will ask you a question. I am reading from page 1283 of the record:

Q. Doctor, would you consider it advisable in the interest of public health and in the light of our present scientific knowledge, that a product composed of skimmed milk, vegetable oil, and Vitamins A and D be used in place of whole milk in the diet of infants and children, and give any reasons you have for your answer. A. I would be against such a thing for the reasons that I have already stated. There seems to be absolutely no need for it and there is a risk taken because of absence of information about such a product. That is as much as I would want to say about it. Do you agree with his statement there? A. Well, no, I don't agree with his statement. I mean in the sense that I do not think that Dr. Hartmann was stating anything against the wholesomeness of this food. What Dr. Hartmann said, as I understood the testimony, read into it, was that he did not see any particular reason for he himself changing.

Q. Well, I am asking you now do you agree with his answer there to that question? A. May I read that?

Q. Read the question and the answer. A. No, I don't agree with that.

Q. Then you don't agree with him, do you? A. Now, I said I didn't disagree with him on the question—that is a matter of opinion. Now, the thing that Dr. Hartmann—the question that was asked me that I was testifying to was the wholesomeness of the food. I think they are two different matters.

Q. That isn't the question I asked you. A. Well, yes, with that statement, but I do not read into that statement anything to do with the wholesomeness of the food.

Q. Well, regardless of the wholesomeness of the food, you don't agree with that statement of his there, do you? A. No (T. 1820).

Re-Direct Examination.

Q. (By Mr. Clark). What is Dr. Hartmann's particular work in pediatrics? A. Dr. Hartmann is one of our most brilliant young scientific men that we have in pediatrics. His interests have been chiefly along the metabolism of disease processes such as diabetes, nephritis, and conditions such as that type.

Q. Why do you disagree with the statement that Dr. Hartmann has made there in answering that question? A. Why do I disagree?

Q. Yes. A. Well, because I believe that in view of our present scientific knowledge that a product composed of skimmed milk, vegetable oil, Vitamins A and D, can be used in the place of whole milk in the diet of infants and furnish a perfectly satisfactory and suitable food.

Q. You base that upon human experience, do you?

A. On human experience" (T. 1822).

DR. OSCAR FRANKLIN BRADFORD.

(T. 1822-1834.)

Direct Examination.

Dr. Bradford upon being re-examined testified that since his previous testimony given in the case he had heard or read the testimony of the State's experts who had testified in the case, including Dr. Hughes, Dr. Hart, Dr. Elvehjem, Dr. Hartmann, Dr. Hogan, and Dr. Zentay. That in his testimony in chief he expressed the opinion that there was no difference of opinion among competent authorities concerning the food in question and concerning its safety for use by the public for the feeding of adults, youths and infants (T. 1822).

The witness testified that none of the statements made by the witnesses for the State caused him to change his opinion heretofore expressed (T. 1823).

A. I have not changed my opinion.

Q. Why do you say that? A. Well, as I have heard and read the testimony in this case, several angles of the case have appeared. The first of these, and we will take them one at a time, is based upon experiments of feeding of not only butterfat oils but various vegetable oils by themselves and in combinations. The acceptance in my own mind as a clinician of these experiments makes me deduce that any variations that have appeared in this properly conducted—

Q. (Interrupting) You are speaking about the rat experiments? A. The rat experiments, properly conducted, have shown that the variations fall within the

physiological differences in human beings when we transpose that knowledge into that of infant feeding and human feeding. They do not vary enough to fall within the zone of pathological physiological conditions or unnatural physiological conditions, so if we take that evidence and apply it to the human being, we must then admit that it is in the physiological variation balance. They have all shown that neither of these oils, whether animal or vegetable, are capable of sustaining prolonged life except by supplementary feeding. Then if we go to the opinion of the clinician in the record, there is no difference, as I see it, based upon experience, and that is what a clinician's evidence must be based upon, whether there is no difference in the opinion that this is a wholesome and nutritious food. There is no evidence shown that it is a detrimental food beyond the bound of normal physiological variations in human feeding, infant, young, adult, or grown person. There is no evidence shown that it in any way impairs the development of an individual to such a state of adulthood that he or she would not properly reproduce. Then if we accept expert testimony as to its expertness, there has been no clinical evidence introduced by competent public health authorities that it is detrimental. I am alluding here to Dr. Hartmann's answer of a question in which he qualifies himself as being a public health—or a man especially trained in public health work. As pediatrician to the State of Missouri, in charge, you might say, of not only instruction but working with the physicians in public health work, I have as yet not known of a single instance in which a vegetable oil fed in combination with this skimmed milk has been harmful or detrimental. I know that this product is not because I have seen it, in

my rounds of the state, fed to children, and I have been examining some of the records with the physicians who have fed it, and there have been considerable numbers of children fed it under the direction of physicians and thousands of them fed it outside the realm of the physician's direction, without any direction from the physician, and so far in the State of Missouri, there is no single case that health impairment has been proved to result from this sort of feeding. I think that justifies my saying that I do not disagree with Dr. Hartmann or Dr. Zentay's testimony in regard to this because Dr. Zentay, in blending this similar opinion of his and qualifying himself as having worked with public health authorities, still did not say that it was a dangerous or a harmful thing, and again expressed only an opinion. Unfortunately, I do not know whether he has had the length of time of feeding experience to have tested out the importance of vegetable oil feeding in the feeding of infants.

Q. Let me ask you this question, Doctor: If an expert would say that his reason for preferring other foods to foods similar to this is based upon the lack of experience in the feeding of foods of this type, what would you say?

A. I would say that in my opinion, with 25 years' experience with feeding vegetable oils in combination with skimmed milk and the standard pediatric diets that various parts of the country use, certainly that is clinical experience enough to be accepted, and I would accept it and take the responsibility in my own practice.

Q. Well, would an opinion of that sort that is based upon lack of clinical experience indicate to you as a pediatrician that the experience of other pediatricians in the feeding of this had been overlooked or had not been taken

into consideration, or whatever you want to call it?
 A. I don't understand that. Now, the fact that someone might not—

Q. You have read Dr. Hartmann's and Dr. Zentay's testimony and they have said that whatever preference they express is due to the fact that there hasn't been sufficient clinical experience in feeding of foods of this type. Now, could a pediatrician reasonably come to that opinion unless he had overlooked the experience of 25 years of feeding? A. He could not come to that without oversight of what we all know if we have read the American Pediatric literature, because beginning with about 1915 or 1916, maybe, articles have appeared regularly, and not only that, but most of us have had the opportunity of feeding and have fed, if we have been clinical practicing physicians, many times not only milk mixtures but we have been forced to try various mixtures such as margarines which must supply that knowledge to clinical medicine, either by actual necessity or by convenience. Many times it is more convenient to feed one of these children a feeding in which vegetable oil has been used instead of the real butterfat because the butterfat many times will produce eczema or it will produce what we call spastic colitis; it will produce asthma, whereas the other oil might not. Now, there is the possibility of this: that, on the other hand, the vegetable oil might reduce that and the butterfat won't. So it is a matter of choosing for the patient in hand which of these, and all of us have done it many, many times.

Q. In normal feeding, I believe you stated in your testimony in chief, you have relied upon these proprietary foods containing vegetable oils largely? A. I have

thought of that since that answer, and in normal feeding up until about 1922, I fed whole milk, or skimmed milk—I never fed whole milk mixtures; I have always taken off the light portion of the cream in cow's milk as long as I have been a pediatrician, and that was more or less on clinical judgment, but since about in the early 20's, in that period I fed modified mixtures of modified whole milk—in other words, I took off at least a third to a half of the cream to get rid of that much irritating substance. Then when Dr. Marriott and Dr. Hartmann appeared with a great deal of work in modifying milk with acid mixtures, I was the last pediatrician in Kansas City to take it up, after the rest had all tired of it, perhaps, or whatever it takes. I started then to feed acid mixtures in more of a skimmed milk proportion, and worried along with that for five or six or seven years. In the early 30's I began using milks with most of the fat or all of it that I could conveniently get off removed, and with the addition of vegetable oils in various forms, various vegetable oils. I am as much a vegetable oil feeder now as I was the other 15 years ago.

Q. So for the last 15 years, then, you, I believe you testified to that, have had clinical experience, as well as hundreds of other pediatricians? A. Yes, sir.

Q. Now, then, with that before you, is Dr. Hartmann or Dr. Zentay justified from a scientific point of view in stating that there has not been sufficient clinical experience to justify the unlimited use of that product? A. In answering the question that I said there was no difference in opinion, I weighed that part of my answer, and in my opinion one who has not had the experience or has not availed himself of the experience in infant feeding, not to

accept vegetable oils in infant feeding the same as he would other fats, even to the animal fats, I would say that that is right. I mean that I don't justify that answer.

Q. You don't justify the statement that there has been lack of clinical experience? A. That is right" (T. 1824, 1825, 1826, 1827).

Cross Examination.

On cross examination the doctor testified that he was acquainted with Dr. Hartmann and had known him for many years. That he had done work in infant feeding saying "Yes, but most of it—" (T. 1828). That he was acquainted with Dr. Hogan, met him in Sunday School and had known him about 6 years—that his chief field had been vitamins; that he was not well acquainted with Dr. Zentay; that he did not believe that any of the men were careless in their work, but that he believed that Dr. Hogan and Dr. Hartmann were more scientific in their work than Dr. Zentay (T. 1829).

"Q. Now, as I understand, you say there is no difference of opinion between you and these men in the conclusions they reached? A. Yes, I do. There is no difference of opinion in the conclusions which they reach that are based upon clinical experience and clinical judgment.

Q. You don't know what they took into consideration in arriving at their stated opinion other than what was in this record? A. What they said they took into consideration at the time they made the statement with the answering of the questions that you asked before them.

Q. Now, I want to read to you, Doctor, on page 1234 of the transcript of Dr. Hogan's testimony, where the fol-

lowing question and answer is shown, and I will then ask you a question about it:

Q. Based upon your long experience in the nutritional research, what do those experiments—and he was referring to Hart's and the other experiments—'indicate as to the use of vegetable oils to replace butterfat in the diets of infants and children? A. They are unanimous in indicating that whole milk should not be replaced in that manner.' Now, wait a minute until I ask my question. Do you agree with his answer there? A. I do not, because he never fed an infant or a child in his life. Dr. Hogan has always worked in the laboratory in the dairy industry and not in clinical medicine.

Q. Reading from page 1283 of the same transcript with regard to Dr. Hartmann's testimony, I want to read you a question and answer given by Dr. Hartmann and I will then ask you a question.

Q. Doctor, would you consider it advisable in the interest of public health and in the light of our present scientific knowledge, that a product composed of skimmed milk, vegetable oil, and Vitamins A and D be used in place of whole milk in the diet of infants and children, and give any reasons you have for your answer. A. I would be against such a thing for the reasons that I have already stated. There seems to be absolutely no need for it and there is a risk taken because of absence of information about such a product. That is as much as I would want to say about it. Now, do you agree with Dr. Hartmann's statement there or do you disagree? A. Yes, I agree with it because he made his answer and made no reference to the question asked of whether or not in the light of public health this answer should be made. He answered

the question by not answering the question. He said nothing about in the interest of public health in answering that question.

Q. Well, you agree then with that statement of his to that question? A. Well, I would have to agree to what he said, but he didn't answer the question. I mean, he evaded the question by leaving out—

Q. (Interrupting): We will leave that up to the Court. You agree with his answer, what he did give?

A. No, I wouldn't agree with his answer based on my knowledge because I couldn't. I mean, I couldn't agree with his answer based on his knowledge because I don't know how much knowledge he has.

Q. You said a while ago you knew what he had to take into consideration in making an opinion. A. No, his apparent knowledge of public health is what I meant. Because, as far as I know, he is not a specialist in public health. He has always worked, even before he graduated, and since, in the treating of sick children in the St. Louis Children's Hospital the bulk of his time.

Q. Does Dr. Zentay take care of a considerable number of babies? A. I do not know, sir. I know he is a practicing physician and that he is employed in other work.

Q. Now, I read to you from page 1320 of the same transcript with regard to Dr. Zentay's testimony a question and answer and I will then ask you about it:

Q. Based upon your knowledge and experience, would you say that the defendant's product could safely replace whole milk in a diet of infants and children? A. I don't think so. At least, I wouldn't like to feed it to my own children or my patients. Do you agree with

his answer? A. He said, 'based on my knowledge.' Again, that is his knowledge.

Q. I am just asking you, do you agree with that answer or don't you? (T. 1829, 1830, 1831.)

A. He has evidently answered his question. If I answered my agreement to his question, as to whether or not he was right in answering that question, I would have to take into consideration again that in answering as he does, he uses an opinion which is not based upon the fact of 25 years of the active feeding of children in America.

Q. Doctor, you know that Dr. Zentay has been practicing down there for sometime, don't you? A. Yes, sir.

Q. And you know that he knows whether there has been S. M. A. fed to children or not fed to children? A. I am not so sure that he does, that he knows the length of time it has been used as maybe some of us older ones do, because he was not practicing at the time when S. M. A.—

Q. (Interrupting) Are you telling this Commissioner that you don't think Dr. Zentay knows there is such a thing on the market as S. M. A. and he has never used it? A. No, I am quite sure he has used them, but I doubt if he has used them or taken into consideration fully the experience of a man like Dr. Gerstenberger or whole cities that have used practically nothing else for 20 years or more.

Q. Now, Doctor, this is the question that was asked Dr. Zentay, and I want you to listen very carefully:

Q. Based upon your knowledge and experience, would you say that the defendant's product could safely replace whole milk in a diet of infants and children?

His answer was: 'A. I don't think so. At least, I wouldn't like to feed it to my own children or my patients.' Now, you just assume that in answering the question asked him, he took into consideration what knowledge he did have. We must assume that he did. Do you agree with that?

A. Based upon my knowledge, do I agree with him?

Q. I am asking you for your opinion as to whether you agree with the answer to that question. A. Based upon my knowledge?

Q. I am not asking you about his knowledge; I am asking you about your own. A. You mean upon my own.

Q. That is right. A. I would have to say that I would not hesitate to see this product fed to babies. If I did hesitate to see it fed, as a public health matter or otherwise, then I would have to make excuses for having used it myself in the feeding of babies in my own private and clinic practice. I couldn't do anything else with my knowledge but say that the answer is incorrect.

Q. You don't agree with his statement? A. No, as far as he goes, I agree with it, but the statement you asked me goes farther than the one that you have asked Dr. Zentay, because you are asking me additional knowledge which you didn't ask Dr. Zentay. (T. 1832, 1833, 1834).

IV.

Results of Animal Feeding Experiments.

PLAINTIFF'S EVIDENCE.

DR. J. S. HUGHES.

(T. 974-1029, T. 1109-1143.)

Direct Examination.

Dr. J. S. Hughes stated that he lived at Manhattan, Kansas, and was on the staff of the Chemistry Department of the Kansas State College; that he received a Bachelor of Science degree from Ohio Wesleyan in 1908, a Master of Science there in 1909, a Master of Science from Oklahoma State in 1910 and a Ph. D. from Ohio State in 1917; that he was a member of the American Chemical Society, American Institute of Nutrition, American Association of Biochemists, Phi Beta, Sigma Chi, Phi Kappa Phi and honorary chemistry and agriculture societies.

That he had been at Kansas State College thirty-two years; that he taught biochemistry and pathological chemistry (T. 974).

That biochemistry dealt with chemical composition and reaction in living cells, plant or animal; that pathological chemistry dealt with abnormal cells; that he taught nutrition, a study involving the chemical requirements of animals and the changes taking place in the body; that he taught a course in chemistry of the vitamins; that a part of his time was devoted to directing fundamental nutrition studies in the Agricultural Experiment Station; that he had published papers in scientific journals (T. 975), and for the past twenty-five years there had been two or three papers each year describing their work in vitamins.

fat metabolism and nutritional requirements for farm animals; that he first became interested in nutrition about twenty-nine years ago as a result of sickness in his own family; that he took over the work of the Experiment Station in 1917 and his hobby had been a study of the requirements of the animal and human mother (T. 976); that Dr. Lyman at Oklahoma State and he carried on vitamin experiments in the summer of 1914 and were the first to show the effect of lack of vitamin A in poultry; that in the last few years (T. 977) tremendous interest developed in the adequacy of the human diet; that he first became acquainted with the term "filled milk" when the case was pending in Kansas and Mr. Mohler, Secretary of the Department of Agriculture, asked for assistance in prosecuting the case; that he was familiar with Defendants' product now called "Milnot" which was then sold under the name "Milnut"; that they contained evaporated skim milk, hydrogenated cottonseed oil and vitamin A and D concentrates (T. 978).

That the word "fat" may apply to a complex mixture such as butterfat or lard but chemically it refers to only one group found in the mixture; that scientifically the word "lipin" should be used for the group and "fat" for the specific compound; that lipins include fatty acids, fats, waxes, phospholipins, glycolipins, sterols, hydrocarbons and others (T. 979).

At this point the witness demonstrated the make-up of fatty acids by the use of wooden models which he had present. He stated that the fatty acids represent a class of organic compounds made up of a chain of carbons with the acid group on one end, the simplest being two carbons with the acid group known as "acetic" acid; that other

models contained from four to twenty carbon atoms; that No. 4 was butyric; that 6, 8, and 10 were caproic, caorylic and capric; that in an ascending order the acids were lauric, myristic, palmitic, "stearic," meaning solid, arachidic, behenic, lignoceric and cerotic; that that was the saturated series and there was also the unsaturated series (T. 981); that the models also showed solubility properties of the fatty acids; that in the body was seldom found any considerable quantity of the fatty acids themselves (T. 982); that they are found in many compounds with glycerin or glycerol, practically a neutral compound; that the typical chemical fat had three fatty acids hung onto glycerin, and in that form was laid away as a reserve fund; that fat was a glycerol ester of the fatty acids (T. 983).

That the fatty acids were largely deposited in the body or plant as reserve food but were built into many active tissues in the body; that the different acids had different functions in the body; that butyric was soluble in water and was found in the food nature makes for very young animals (T. 984); that lignoceric acid was built in the myelin sheath, the insulation around the nervous system, which was not put on until after the child was born; that butterfat was well supplied with that (T. 985).

That when young rats were not fed properly they were unable to learn as rapidly as properly fed rats; that experiments were difficult to carry out with very young rats and the youngest that could be kept alive was at about two weeks; that the nervous system in the rat as in the baby was not developed at all completely until after birth; that nature has provided food containing the double bond lignoceric acid which was not found in veg-

etable oils (T. 986); that the animal which did not have it developed the Burr disease; that it was found in vegetable oils but when prepared for market it was taken out because it caused rancidity (T. 987); that caloric value was the amount of the heat the compound gave when burned; that from 1900 to 1920 the leaders in nutrition devoted themselves to the determination of energy value (T. 988); that much of the malnutrition in the country could be traced to that teaching (T. 989).

That the composition of the adipose tissue of an animal could be changed by feeding particular fatty acids (T. 990); that butterfat contained nineteen fatty acids and cottonseed oil contained none of the short chain acids found in butterfat; that it contained six or seven fatty acids.

The witness identified Plaintiff's Exhibit K as a table showing the fatty acids derived from butter, and the ones derived from raw cottonseed oil (T. 991); and it was a summary of the recognized analysis of the two fats; that if cottonseed oil was hydrogenated it lost the fatty acids with the two double bonds (See Plaintiff's Exhibit LL, A. 404).

That the physical capacities of a fat depended upon the fatty acids it contained; that butterfat from different species varied a little in the ratio but no other fat approached it in the assortment of fatty acids; that all of the milk of the different species of animals, including the human, contained the various fatty acids (T. 993); that vegetable oils never contained the short ones; that he knew of no exception to the fact that nature had arranged that particular fat for the growth and development of the young.

At this point Defendants' counsel objected to the witness testifying as to the effect of the different acids on the human body because he was not a physician and had not experimented with the human body (T. 994); the Commissioner ruled that the objection would go to the weight of the testimony rather than to admissibility.

The witness testified that the field of the biochemist was to know the chemical composition and reactions of cells in animals and human beings; that the biochemist taught the physician in regard to that; that experiments were conducted where conditions were controlled while clinicians did not have complete control of their patients (T. 995).

That experiments with animals suggested very definitely the trends of chemical reactions in human nutrition; that a few physicians perfected themselves in chemistry before going into experimental medicine but the ordinary practitioner gave no attention to that field (T. 996).

That the same fatty acids have been found in mother's milk; that they would have to presume from old experiments in the analysis that there was every reason to believe that the fatty acid, linoleic, had to be present in the human beings because it cured bad skins; that it had been found that if an animal was fed a fat having a high concentration of unsaturated fatty acids, which made the product liquid (T. 997), it would impart that particular property to the commercial products; that they fed various animals various types of feed and found that the types of fatty acid in the feed would be deposited in the butter or in the animal tissue.

That it would be foolish to suggest that different fat compounds would have equal food value; that they knew definitely that linoleic acid was necessary for normal function of experimental animals and presumptively for humans (T. 988) because skin lesions similar to those in animals could be secured by giving that; that it was found in natural cottonseed oil but was taken out by hydrogenization; that butterfat was intended for the very young and no other fats had the same composition; and that they were getting on dangerous grounds in making radical changes from natural foods without first knowing what they were doing.

That "digestibility" was the chemical process by which foods were broken down so that they could be absorbed; that there was no argument at all about the digestibility of vegetable and animal fats provided that could be melted in the digestive tract (T. 99); that fatty acids and butterfat had about the same digestibility; that "nutritive value" indicated the value of a particular product to the human or animal in carrying on its necessary functions; that fats would vary in nutritive value according to the fatty acids they yielded; that wholesomeness was particularly a matter of definition and a compound to be wholesome had to contribute to the well-being of an animal or human being, and any compound which crowded out essential things and caused malnutrition was unwholesome (T. 1000).

Q. What are the factors to consider in determining the nutritional value of a particular food? A. The ones that are most apt to be lacking, causing malnutrition, that is so prevalent at the present time, lack of suitable vitamins, quantity and quality, and minerals, possibility

of proteins, and in some cases, although it is not nearly so clear in the adult as in the baby, where you have the special growths going on, there might be some effect derived from the quality of the fat, but that is very questionable in an adult where the mixed diet is concerned. So I would say that what the government is attempting to get the farmers to produce at the present time are foods higher in vitamin content, better balanced in minerals, with adequate protein" (T. 1001).

That you could not say that because vegetable oils were just as digestible as butterfat and had the same energy value that they had the same nutritional value; that the nutritional value of a protein or a fat depended upon the fatty acids it provided; that a phospholipin was a fat in which one of the fatty acids had been replaced by a nitrogen base containing phosphoric acid; that choline was absolutely essential (T. 1002) in many conditions of the body, so it was called a vitamin, and there was not a cell in the body that did not have that phospholipin; that if you did not get choline in the diet when conditions were such that the animal could not make it, you would have an irreparable damage to the liver and death would result.

That milk contained phospholipins but hydrogenated cottonseed oil did not; that about 30% of the brain tissue was made up of lipins and a fairly high percentage of that was phospholipins (T. 1003); that when the product was manufactured and the cream separated the phospholipins would go off with the cream, leaving only a fraction of 1% of lipins left in the skim milk; that the majority of phospholipins were removed in the separation process but associated with the fat globules and the hull around them; that ordinary skim milk had about 1 10th of

1% of fat-like material left in it (T. 1004); that phospholipins would be removed in the refinement of vegetable oils; that hydrogenated cottonseed oil did not replace the phospholipins lost by the cream separation.

That a sterol was a solid alcohol, such as cholesterol, found in every living cell in the body and sterols were found in whole milk, going almost entirely into the cream (T. 1005); that you never found the same sterols in plants that you found in animals; that sterols could be removed by a process of chilling. That cream contained more than mere butterfat; that the fluid part left was buttermilk which had many of the components found in the liquid part of the milk and in addition had the "hulls" on the butterfat globules; that buttermilk was higher in nutritional value, measured by actual results, than skim milk (T. 1006) and they found that two of the water soluble vitamins, thiamin and riboflavin, were at least 50% higher in buttermilk; that buttermilk contained a higher proportion of phospholipins of the milk, sterols and probably fat soluble vitamins.

That as far as they could determine vitamin E had to do with cell division, its absence for too long causing sterility; that in the young animal it was necessary for normal muscle development (T. 1007); that rats fed on a milk diet showed no evidence of any vitamin E deficiency and they assumed it was present; that according to the record he read vitamin E was removed from hydrogenated cottonseed oil; that it was found in the fat part of whole milk, there not being enough E in skim milk to provide the vitamin; that to produce a diet low in vitamin E to demonstrate the deficiency they would use a considerable portion of skim milk (T. 1008), and that if they put

butterfat in they could not demonstrate it, and it was on that basis that he said it was not in the skim milk; that there was not enough left in skim milk to be significant.

That vitamin K was a tool that the liver needed to build up protein and it was required in blood clotting; that there was no K deficiency where milk was fed; that he had done no work on the question as to whether it was in the skim milk or the cream portion but K, as they knew it in nature, was fat soluble; that there was a lot of work to be done because they had not nearly completed their information of what vitamins did (T. 1009); that any fat soluble vitamins taken off of the cream in the manufacture of Defendants' product were only replaced to the extent of the fish liver oil concentrates which were added, with the exception that he could not state positively that there was not some K; that they attempted to restore A and D.

That they knew definitely that the baby had to have vitamin K; that it showed no deficiency if it got milk and you could argue whether it was in the milk or whether the milk enabled the child to get it in the digestive tract (T. 1010); that he knew of no results indicating that a child could get by on skim milk without vitamin K, and you could not get by with experimental animals; that in enumerating the nutrients of whole milk lost in whole or in part by the removal of cream and not replaced by cottonseed oil or fish liver oil concentrates added to Defendants' product, he would put in the fatty acids contained in butterfat and not-refined hydrogenated cottonseed oil, the phospholipins removed by Defendants' own statement, a part of the water soluble vitamins going into the buttermilk, and the sterols removed in the cream which could

not be replaced by the vegetable oils and were not replaced in any appreciable amounts in the fish liver oils; that vitamins E and K would not be put in the fish oil and would not be put in according to their testimony from the cottonseed oil, and there was no evidence that K would be in it; that they used the hydrogenated oils Snowdrift or Crisco to get fats free from vitamins in their laboratories.

That the vitamins in milk were classified as to fat and water soluble (T. 1011), the fat soluble going with the fat and the water soluble being found in the water soluble part of the skim milk and buttermilk; that in a display of vitamins which he had in fifteen bottles, and there were more which they did not know about, they would have in one group carotene and vitamin A, that being in the butter; that butter would have a small amount of vitamin D, an irradiated sterol; that nature did not provide it in ordinary foods but it was made under ordinary conditions when the sun struck the animal; that vitamin K, needed for the liver to prevent hemorrhage was found in the fat; that E was fat soluble and was not found in hydrogenated refined vegetable oils; that he was not positive about K (T. 1012).

That in the water soluble class they had vitamin C, which was found in the milk of mothers and of cows in capacities needed by the young; that in the case of the calf it made its own vitamin C so it was not important that it be in the milk in large quantities; that the next five were grouped together as the B complex; that they were thiamin or B1, the tool needed by the body to produce energy from sugar, and it was in milk in adequate quantities for a mother producing the milk, but you could

not call it a rich source; that vitamin G or riboflavin was in eggs and skimmed milk and was a common deficiency in the human race; and was much richer in buttermilk than in skim milk (T. 1013); that in making filled milk all of it that went into buttermilk was lost.

That the next one was called nicotinic acid or niacin; that all of those were found in milk in sufficient quantity for the young of the mother producing the milk if they were properly cared for; that the next was vitamin B6, pyridoxin, and the lack of it in animals caused nerve disorder and skin lesions; that when milk was fed no such deficiency occurred; that pantothenic acid was the tool which makes black hair (T. 1014); that you could not produce gray hair in rats if you fed them milk; that the next was chlorine and under certain conditions the body could make it, and that in others it could not; that no one knew whether the new-born baby could make it and for that reason they felt it would be unwise to use a baby food without it; that normally it occurred in the phospholipins; and was in the cream but only in small amounts in the skimmed milk and practically none in refined hydrogenated vegetable oils.

That the next was biotin and one of the interesting things in the rat was that the hair fell out around the eye; that the next was inositol, found in large quantities in bran (T. 1015); that its exact place in nutrition of human beings was not known but experimental animals could not grow and function properly without it; that para-amino-benzoic acid was claimed by one of the laboratory workers to be necessary to produce black hair; that there were a number of so-called factors necessary for hatchability of eggs and there was a grass juice factor, factors R and S (T. 1016).

That some of the medical profession accepted the findings made in the chemistry laboratory regarding these matters and some did not; that there was not a single compound there which was known to be a vitamin eleven years ago and that most of the doctors now practicing received their schooling before then (T. 1017).

That if any deficiency resulted in the lack of certain vitamins it would not necessarily show up immediately; that for instance the lack of vitamin A in mother's milk might cause tooth decay in the child ten years later, and you could not find the full effect of a deficiency diet in two or three or four weeks' feeding and they frequently ran two or three generations of rats before they came to a conclusion as to whether the diet was adequate or inadequate; that ten days in the life of a young rat roughly equalled the development of a child in about a year.

That after their Supreme Court had upheld the constitutionality of their filled milk law in which they referred only to cocoanut oil, the company making the product came into the State with a similar product (T. 1019) in which they had substituted hydrogenated cottonseed oil; that Mr. Mohler called on Dean Call for technical information as to whether the company had improved the product so that for any reason the law could not be considered constitutional and Dean Call assigned him the task of checking that for Mr. Mohler.

That the workers at Wisconsin had shown that rats started in infancy would not grow as normally on vegetable oils as on butterfat so he repeated the experiment with the particular product sold in Kansas so that the Agricultural Department would have the evidence to present; that the sample of Milnut was obtained in Topeka

by Mr. Dodge, the dairy commissioner; that they also sent to Kansas City and secured Carolene containing cocoanut oil and purchased one of the brands of evaporated milk on the local market; that rats were ordered from Madison, Wisconsin (T. 1020), and were taken from their mothers when 20 days old, were shipped to Manhattan, Kansas, having gone for a period of about 36 hours without food, not having consumed the food that had been placed in the pen; that they set up three groups of twelve rats each in individual cages with the same number of males and females and the same average weight; that the milk for feeding was taken from the three types of cans each day, diluted with water and mineralized to give the copper, iron and manganese which had been found necessary to get normal growth with milk; that the rats were weighed each week and the experiment was conducted for four weeks.

That his experiment checked the results that had already been determined at Wisconsin, that if rats were taken from infancy they would not grow as well on skim milk and cottonseed or cocoanut oil fortified with A and D as in this product as they would if given a product of evaporated milk (T. 1021); that the rats did much poorer on the vegetable oil products, Milnut and Carolene, than on the evaporated milk containing butterfat; that they were all fed at the same fat level of 3%, that at the end of the 28 days five rats each died on the Milnut and Carolene; the final weight included only the rats that survived the 28 days; that evaporated milk rats had an average daily gain of 2.1 grams, Milnut 1.2 grams, cocoanut 1.7 grams per day per rat; that none of the rats on the evaporated milk died and his explanation was that the

milk supplied the thing that the infant rat needed, which was not supplied in the vegetable oils; that the rats did a little better on the cottonseed oil product and on the cocoanut oil product.

That Table 1 in the report was a summary of the results; that Table 2 gave the number of rats which received the evaporated milk, their sex, weight of each rat at the beginning and every seven days thereafter, as well as the average of the group at the beginning and at the end, and the average gain; that Table 3 was a similar table for the rats receiving Milnut; and Table 4 was a similar table for the rats receiving Carolene, containing cocoanut oil; that the page containing the two labels from Milnut and from Carolene were taken off the first two cans received.

Plaintiff's Exhibit L (T. 1025), being a certified copy of the report of the rat feeding experiment conducted by the witness, was offered in evidence and received, subject to objections which might be made by counsel after an examination of the exhibit.

Plaintiff's Exhibit L is in words and figures as follows:

Kansas State College Of Agriculture
And Applied Science
Department Of Chemistry
Manhattan

Report On Filled Milk Experiment

Experiment begun November 23, 1940

Experiment concluded December 21, 1940

This experiment was conducted at the request of Mr. J. C. Mohler, Secretary of the Kansas State Board of Agriculture.

Object. The object of this experiment was to compare the nutritive value of Milnut, a filled milk containing cottonseed oil; Carolene, a filled milk containing coconut oil; and a standard evaporated milk, Carnation brand evaporated milk was used.

Professor Hart of Wisconsin, as well as other workers, had demonstrated the superiority of evaporated milk over filled milk as a food for very young rats. Mr. Mohler wished to have the same test made on Milnut, a filled milk containing cottonseed oil being sold in Kansas, as Professor Hart had made.

Method. The method used by Professor Hart in studying the relative nutritive value of butter and other fats was used.

Thirty six rats, twenty-one days old, were purchased from the Sprague Dawley Company at Madison, Wisconsin.

These rats were divided uniformly among three lots of 12 rats each. Each rat was placed in an individual cage and given all the diluted milk it would consume. Records were kept of weight of rats and volume of milk consumed.

Mr. Dodge, State Dairy Commissioner, secured the filled milk used. He ordered the sample of Milnut containing cottonseed oil from a grocery firm in Topeka. I went to the store and secured this case of Milnut. Mr. Dodge secured the sample of Carolene in Kansas City, Missouri, and had it delivered to me at the laboratory. I secured the evaporated milk (Carnation) on the local market.

No chemical analysis was made of these products. They were assumed to contain what was declared on the label.

My Commission Expires November 27, 1945.

Weight in grams of the rats in Lot I which received
Carnation Evaporated Milk.

Date	1♂	2♂	3♂	4♂	5♂	6♂	7♂	8♂	9♂	10♂	11♂	12♂	Av.
11-23-40	38.4	35.3	33.9	35.8	32.0	34.4	29.8	28.3	37.3	29.8	29.4	30.8	32.9
11-30-40	56.9	50.8	51.2	42.7	41.2	44.3	39.6	54.8	45.7	45.7	43.7	47.3	
12-7-40	77.5	58.1	71.3	73.8	65.8	63.3	49.3	60.1	72.9	62.8	60.8	60.8	
12-14-40	100.6	70.0	85.1	83.9	84.9	86.2	56.9	82.3	92.3	90.2	62.8	65.9	
12-21-40	113.3	91.0	100.8	102.4	89.8	96.0	73.9	90.1	102.3	112.5	85.1	72.6	94.1
Gain	74.9	55.7	66.9	66.6	57.8	61.6	44.1	61.8	65.0	92.7	55.7	41.8	61.2
Average daily gain-- 2.1 grams													

[illegible][illegible][illegible]

The witness testified that he would say that the effect of various vegetable oils on the vital organs of the body had not been adequately studied.

In answer to the question as to whether he thought a product such as Milnut should be allowed to be sold under circumstances that it could find its way into the diets of infants and children in place of whole milk, the witness stated:

"I have a very definite opinion on the matter, as I am sure that other people would if they knew the facts, and that is that anyone who would suggest to a mother that she feed her baby on skimmed milk and hydrogenated cottonseed oil, which she has in her kitchen as Snowdrift, and fish oil, is going a long way without any information at all that that product is healthful. Personally, I think it would be subject to malpractice because we know positively that it isn't like butter and we do know that after years of work we have educated the mothers to the point that infant death rate has been cut down. We are doing everything we can in Kansas to improve the health of the people. I happen to be on the State nutrition Committee that is working diligently at that task and speaking for that group, we certainly do not want anyone selling a concoction of hydrogenated cottonseed oil, skimmed milk and fish oil to our babies."

Cross Examination.

On cross examination the witness produced his work sheets for examination by defendants' attorney (T. 1027).

Defendants' Exhibit 156, being a photostatic copy of the record of the experiment as kept by Dr. Hughes at the time the experiment was conducted, was offered in evidence (T. 1109). That record contained four sheets, the

first being the daily weights of the rats in Lot II, the rats fed on Milnut, the cottonseed oil product. The second sheet, Table II, showed the daily weights of the rats in Lot III, which received Carolene, the coconut oil product. The third sheet stated that the rats were received at noon on November 23, 1940, and looked to be in good shape but had eaten very little of the potatoes in their cage. The third sheet, Table II, was a record on the daily weights of the rats in Lot I; which were fed Carnation Evaporated Milk.

The witness stated that the tables in Exhibit 156 were copied into Plaintiff's Exhibit L; that the witness did not perform any other complete experiment with the food but had previously ordered some rats from Sprague-Dawley Company, the rats being shipped through Chicago; that they were in poor shape when they arrived, 48 hours later, and he had to stop the experiment because the rats were in such bad shape that they could not be used; that he did not have the notes on the experiment (T. 1110); that the rats in the new experiment were sent directly to Kansas City, were taken from their mothers one afternoon, arrived in Manhattan the next afternoon and were put on feed in 36 hours.

The witness stated that the models he used in showing the various fatty acids did not indicate the size or shape of the molecules as they did not know that exactly (T. 1111); that there were three classes of phospholipins, one being lecithin, one cephalin and the other sphingomyelin; that they have two fatty acids and a phosphoric acid hooked onto glycerol with a nitrogen base attached to the phosphoric acid; that in lecithin the base was choline, a vitamin, in cephalin the base was colamine.

which could easily be segregated; that he had isolated a phospholipin, but had not gone to the trouble to isolate a choline (T. 1113); that he imagined that commercial choline came from soybeans which were very rich in phospholipins; that he doubted if anyone would attempt to use milk as a commercial source (T. 1114); that he had not attempted to isolate a phospholipin from milk but their milk chemist, Dr. Whitnah, had done that to find the amount in skim milk; that a phosphatide was another name for a phospholipin (T. 1115); that phospholipins were used as emulsifying agents to make water and fat mix, one end of the molecule being soluble in water and the other tying the two solutions together.

That the fat in milk could be varied according to the way the cow was handled, and the fat soluble vitamins, and to some extent the water soluble ones, could also be varied in that manner; that it was possible to feed a cow and have her give milk that would make butter devoid of vitamin A, although she would die eventually (T. 1116); that vitamin A varies tremendously with the feed, and milk is never considered an adequate source of D (T. 1117); that if a farmer was a poor feeder, the milk from his herd could be very low in vitamin A (T. 1118); that the Kansas Dairy Laws specified that to sell Grade A milk (T. 1118), the cows must be fed so as to keep them in good health and that involved the feeding of vitamin A (T. 1119).

That in separating cream the fat remaining in the skim milk was generally $1/10$ of 1%, according to Dr. Whitnah (T. 1120); that the fatty substance left in the skim milk would contain some phospholipins and some fat but he could not tell the amount of phospholipins that

would be left in butter; that butter oil was practically devoid of water soluble vitamins (T. 1121); that butter was supposed to be about 83% fat; that he had never himself analyzed buttermilk (T. 1122); which contained about 5% of lipins; that they had found that buttermilk was superior to skim milk in vitamin G content (T. 1123); that vitamin G was water soluble; that the micro-biological method of determining the amount of vitamin G was a recognized method (T. 1125).

That he had never isolated the phospholipins from buttermilk but believed a man in Indiana had done that (T. 1126); that his testimony about the presence of phospholipins in skim milk or butter was based on common knowledge or literature (T. 1126); that his knowledge and the opinion he had expressed about phospholipins was based on the literature.

That the fat globules in cream were surrounded by hulls (T. 1127) which were composed of protein and lipins (T. 1130).

The witness testified that if he could not get anything to eat except Milnot (T. 1130) he would eat it; that he would eat grub worms before he would starve; that he imagined an adult could go quite a while on Milnot if he added copper and iron; that you would have to add copper and iron to evaporated milk or you would be changed in your chemical composition after some time; that he imagined you would first notice scurvy with Milnot or with evaporated milk, because vitamin C was rather unstable; that in heating whole milk, you would get some destruction of some of the less stable vitamins such as B1 and C but the biological value was not reduced (T. 1131); that he would not expect heat to make any particular change

in the fats of butter (T. 1132); that the salt and whey and curd in the butter would be affected by heating; that if there was slight rancidity, the A would be destroyed, and what little D was there would be destroyed; that he did not believe the heating would destroy the E; that in the Wisconsin experiment, where they found evaporated whole milk was not as good in a feeding experiment as raw milk, they did not use just the fat, but used the entire milk (T. 1133).

That you would get equal accuracy with either the chemical method or the rat assay method for vitamin G (T. 1134).

Re-Direct Examination.

On redirect examination the witness stated that cream, as defined in Section 65-707 (B) (1), was the portion you could get off by gravity or centrifugal force; that when churned the fat was gathered and that was butter; that what was left was buttermilk; that in addition to true butterfat, butter contained some whey and curd (T. 1135); that buttermilk had a higher percentage of phospholipins than did butterfat because of the tendency of the phospholipins to be water soluble or mixed with water (T. 1136); that his opinion of the nutritive value of phospholipins was not based on any work he had carried on on the choline fraction; that they knew it had to be used there and they used it regularly.

That in Kansas they had been very active in having the milk ordinance adopted in different cities (T. 1137) and in their town they had a veterinary inspector for the cows, but he could not say he checked the feed too closely; that at Manhattan they had two dairy specialists who put in their time travelling over the state for the purpose

of improving the dairy herd; that the farmers now were doing much better jobs of feeding and that was reflected in the milk supply (T. 1138).

Re-Cross Examination.

On recross examination the witness testified that milk solids and skim milk were incorporated with the fat to produce butter (T. 1139); that the skim milk ingredients in butter did not contain those ingredients in the same proportion as in skim milk alone (T. 1140); that some of the water soluble vitamins were carried with the fat globules (T. 1141); that cream was composed of butterfat, water, casein, salts, vitamins and lipins; that they did not know whether, in addition to the fat, there would be the very same things that were left in skim milk (T. 1143).

Referring to the rat experiment he had conducted the witness stated that he had had charge of the segregation of the rats, different boys in the laboratory assisting him (T. 1438); that he observed the rats every day and saw they were fed but did not actually weigh up the feed himself; that sometimes he was out of town for a day or two (T. 1439); that the rats were received on the 23rd day of November and he imagined it was cold weather; that from the Express Company they were brought to the rat room in the basement of Willard Hall, a steam heated room (T. 1440); that he imagined the rats were received by the man who received all the goods there; that they came late in the afternoon and it was late at night before they were weighed, separated and fed; that they were fed nothing until they were given the test food (T. 1441).

That the rats were first earmarked and weighed and placed in separate cages; that they then took the largest

rat and the next largest and the next largest, then went back and distributed them into three lots as equally as they could, being an equal number of males and females in the different lots; that they came out so the final weights were within a tenth of a gram on the average (T. 1442).

That they did not make an autopsy after performing the experiment; that in that sense he would not call this a complete experiment; that what they were doing was checking the work of Dr. Harris at M. I. T. who had reported at that meeting that he got superior growth on butter, and they were checking the work at Madison, and since they came out in conformity with the published results, that is as far as they went.

"I would not consider that feeding test, as we would call it, by itself, as conclusive at all if it did not merely confirm the work of other laboratories. It would be very presumptive that it was true. One test alone would not be considered as final if it was not in conformity with other tests" (T. 1443).

That there had been a number of rat tests performed on feeding vegetable fats and butter fats with various results; that if they would attempt to make a statement as to the effect of the feeding of fats on rats, then an autopsy would have to be made to prove—

That No. 16 of the Milnut rats started out weighing 39.1, that in the first week it put on two grams, then the next week it weighed 31.5, and then died; that he did not think there was any importance in determining what was the matter with the rat—that it indicated definitely that there was something the matter with the feed (T. 1444); that rat No. 15 started out at 35 grams, a week later

weighed 41.7; a week later 48.2 and a week later 55.5; that the reason for taking 12 rats was because there was a variation in rats and the fact that some lived and some did not would indicate that that variation showed up there; that it was not necessary to post these rats to see that they were dead, but if they had sufficient money and wished to go into the question of the effect of the fat on the rat, and why it had that effect, it would be necessary to look into the tissues (T. 1445); that rat No. 17 gained to the end of the second week, then lost weight and died; that it would be of great importance to find why the fats did not produce better results, particularly in the rats which were subnormal when they started, perhaps; that there was something radically different between the two lots of the rats, the ones eating Carnation and the ones eating Milnut (T. 1446); that it would be of tremendous scientific importance but it would take years to make histological tests and that was not necessary to see the difference between the two lots of rats.

◦ That in testing the difference between two feeds, it was important to see whether the feed would take care of a subnormal animal; that the tests showed that milk had in it the thing that would bring the 20 day old rats back and keep them going while the other feeds would not (T. 1447); that animals in a subnormal condition would show defects in a food in a shorter time than animals in perfect health and he would think the same thing was true with humans.

The witness testified that he had not read the experiment of Dr. Hoagland and Snider of the United States Department of Agriculture, in which they reported a rat experiment with animals starting out at 40 grams, which

would be perhaps 28 days old (T. 1448); that the diet contained casein, salt, dextrose and vitamins, and they found that at the 5% level the diets were equal and at higher levels the lard was better; that there was no reason to expect any of the rats to die and none did.

Q. You wouldn't say because a rat experiment showed a certain result that that would apply to humans?
A. It wouldn't necessarily do so, but it would be very good evidence, if rats showed difference in two feeds, that these feeds were different, and it would be of importance to see why if they were used for humans.

Q. They show a difference in the feeds for rat consumption? A. For the growth of rats; that is correct." (T. 1449).

That he imagined Dr. Hoagland and Mr. Snider would be authorities on the subject.

Defendants' Exhibit 163 (T. 1450), entitled "Nutritive Properties of Steam-Rendered Lard and Hydrogenated Cottonseed Oil" by Ralph Hoagland and George Snider of the United States Department of Agriculture, reported the result of a rat feeding experiment when the rats were fed diets containing lard and diets containing cottonseed oil, the other food in the diets being casein, salts, dextrose, yeast vitamins and codliver oil concentrate, and reported that the rats on the high fat diets were in excellent condition throughout the experiment (T. 1450).

The witness stated that in the Macon case he had criticized Dr. Harris' experiment for the failure to make an autopsy and had stated that without it one could not tell what effect the feed would have on the cells of the animals; that in the Mohler case, he stated that rats, to be useful for an experiment, must be in good condition;

that that would depend upon the test you wished to make and some tests they had them in a subnormal condition (T. 1452).

Defendants' Exhibit 164 (T. 1454), a table prepared by Dr. Frank Gunderson of the Quaker Oats Company, entitled "Vitamin Summary and Cereal Food Facts" was offered in evidence over objection (T. 1453).

Referring to vitamin K, the witness stated that they knew that animals who had had milk did not show bleeding and they presumed K was in the milk, but until someone devised a system where they could prevent the formation of Piper's organism in the digestive tract, it would be a debatable question (T. 1455); that the supply of K a child received before birth would have to come from the mother and after birth it would be carried by the child for a while until it could synthesize the K or get it from its food (T. 1456).

That buttermilk would have a fat like material and would have a higher percentage of phospholipins than there would be in butter; that according to Dr. Holm's article "The Phospholipins in Milk," skim milk had 45% of the phospholipins of milk, yet that would tell nothing about which of the phospholipins it had (T. 1457); that the witness had no opinion as to how the phospholipins were divided; that he imagined his statement in the Steffin case that about half of the phospholipins stayed in skimmed milk and the other half went with the cream was correct (T. 1458); that a number of the particular phospholipins were absorbed onto the fat globules; that according to the figures in the table one-fourth of the phospholipins would be in butter, one-fourth in buttermilk and one-half in skimmed milk (T. 1459).

Referring to the statement in "The Diseases of Children" by Pfaundler and Schlossman, that the majority of the phospholipins are found in skim milk and only traces in the fat, the witness said that he would not agree with that statement in view of the later work and would say that the man must have been in error or that one or the other was in error; that he would rather expect the one on the diseases of children would be in error (T. 1461).

That he had printed in the Journal of Biological Chemistry an article on the deposition of short chain fatty acids in the rat.

On request, the witness furnished a list of publications pertaining to nutrition, found at pages 1463 to 1467 of the transcript.

The witness stated that he was acquainted with the Chemical and Engineering News (T. 1468).

Over objection, defendants' counsel read an article from the Chemical and Engineering News by Carlos C. Van Leer, appearing in the issue of February 25, 1942, for the purpose of asking the witness to comment on it (T. 1469).

The subject of the article was "Milk Drying Under War Conditions." It contained a statement by Sir John Orr, Advisor to the British Ministry of Health, that "We are determined that, at whatever cost, the health of the children in Britain shall not suffer from the food shortage. After wheat and fats I would put dried milk, either whole or separated first on the list of imports. If you can fortify it with appropriate vitamins so much the better." The article stated that skim milk assumed torrential proportions because of the great amount of butter produced (T. 1470), and that in 1939 over twenty two billion quarts found no commercial market; that most of that skim milk

was fed to animals despite Department of Agriculture estimates that milk was about 92% wasted when fed to hogs and about 98% wasted when fed to poultry; that roughly a pound of milk powder was equal to five quarts of reconstituted milk and it sold at about 3c a quart wholesale; that Mary Swartz Rose stated that a quart of separated milk contained about 3% more of the body building elements of milk, calcium, phosphorus and protein (T. 1472) than a quart of whole milk; that dried separated milk was an incomparable food source of calcium, and Henry C. Sherman said calcium was probably more deficient in the diet than any other element; that milk powder was the cheapest source of complete protein, and one of the three cheapest sources of phosphorus (T. 1473); that "no other single food of comparable cost can match dried skimmed milk in the quantities of calcium, protein and phosphorus found in a quart of this powdered milk"; that it constituted one of the cheapest sources of vitamin G (T. 1474); that the casein in milk was adapted to the production of plastics, wool, etc., but this exceedingly valuable food product, according to the Surgeon General, should not be diverted to industrial use until it had been utilized to the fullest extent as a food (T. 1475); that a Borden executive said "There isn't anything you can use to take the place of those things which the cow puts into the skim milk solids. Is it economic from a national standpoint, from an agricultural standpoint, that we shall save that butterfat and throw away those skim milk solids? It isn't."

Deposition of DR. PAUL E. BELKNAP Taken on
Behalf of the Defendants.

(T. 1616-1625.)

Dr. Paul E. Belknap of Topeka, Kansas, who had previously testified in this case, stated that he was a member of a committee known as the "Nutrition Committee," being appointed by Governor Ratner in August, 1941; that its official name was "The Kansas Committee on Nutrition, in Relation to Defense Health and Welfare."

Defendants' Exhibit 1 (T. 1622), a list of the membership of the Committee, was introduced in evidence.

That Dr. Margaret Justin of Manhattan was chairman of the Committee and Dr. J. S. Hughes was a member (T. 1617); that the Committee had not taken any action with reference to condemning or otherwise passing on the use of any food products of which skim milk was a component part, and that the committee had not even considered the matter.

That when Dr. J. S. Hughes testified (See T. 1026-1027) "We are doing everything we can in Kansas to improve the health of the people. I happen to be on the State Nutrition Committee that is working diligently at that task and, speaking for that group, we certainly do not want anyone selling a concoction of hydrogenated cotton-seed oil, skimmed milk, and fish oil to our babes," he was not authorized to speak for the Committee.

Cross Examination.

On cross examination the witness testified that the committee was created by Governor Ratner at the request of the F. S. A. Health and Welfare Committee; and it was the same as the State Nutrition Committee; that the

meetings were held at Manhattan (T. 1618) and the witness had attended two; that there had been meetings since that time, which he had not attended; and he did not know what took place at those meetings but did write Dr. Justin asking if any action had been taken in regard to such products.

That at the meetings he attended, the discussion concerned general affairs of nutrition (T. 1619); that he had a letter from Dr. Justin stating that no official action was taken on the specific question.

Re-Direct Examination.

On re-direct examination, the witness testified that Dr. Hughes was present at the meetings he attended.

The witness identified Defendants' Exhibit 2 as a copy of the letter he wrote Dr. Justin on May 16, 1942.

Defendants' Exhibit 2 (T. 1624); a letter from the witness to Dr. Margaret Justin, inquiring if the Kansas Committee for Defense, Health and Welfare had ever taken any official action recommending or condemning the use as foods of fortified oleomargarine, evaporated milk, sweetened condensed milk, dried milk, or skimmed milk, either powdered or liquid, to which had been added either chocolate or any other vegetable fat, was introduced in evidence over objection that it was hearsay.

Defendants' Exhibit 3 (T. 1624), a letter dated May 20, 1942, from Margaret Justin, Chairman of the Kansas Committee of Nutrition, in Relation to War Effort, addressed to Dr. Paul E. Belknap, Topeka, Kansas, was offered in evidence, plaintiff objecting to its introduction on the ground that it was hearsay. The letter is in words and figures as follows:

"Kansas State College
Of Agriculture and Applied Science
Manhattan

May 20, 1942

Division of Home Economics

Dr. Paul E. Belknap

726 Mills Building

Topeka, Kansas

Dear Dr. Belknap:

No action has been taken by the state committee in recommending or condemning the use of any of the foods you have listed in your letter of May 16. That has been left to the national office and no such recommendation has been received from Dr. Helen Mitchell, who is in charge of the national nutrition service. Her address is Federal Security Agency, Office of Defense, Health and Welfare Service, Washington, D. C.

Cordially

(Signed) Margaret Justin
Margaret Justin,

Chairman Kansas Com-
mittee on Nutrition in
Relation to War Effort"

Re-Cross Examination.

On recross examination the witness stated that he did not know whether Dr. Hughes was referring to that Committee or some other Committee, but there was only one Committee to his knowledge in the State; that it was true that he knew only of what occurred at the meetings he attended and through the letter which he received from the chairman of the Committee (T. 1621).

EDWIN B. HART.

(T. 1029-1143.)

Direct Examination.

Edwin B. Hart of Madison, Wisconsin, stated that he was Professor of Biochemistry in the University of Wisconsin and had been there thirty six years; that he had been Chairman of the Department of Biochemistry and Agricultural Chemistry since 1907; that he had charge of the research carried out in those Departments in the field of biochemistry and nutrition (T. 1029); that he was a member of the American Chemical Society, the Society of Biological Chemists, the Society of Dairy Science, Institute of Nutrition, the American Association for the Advancement of Science, and some other Greek letter societies; that some of the leading scientists in the field of biochemistry and nutrition who had received their training under his direction, were Professor Harry Steenbock of the University of Wisconsin, Dr. P. W. Boutwell at Beloit, Dr. Mary Buell at Johns Hopkins and a number of others (T. 1030).

That he had published about 200 papers on the results of his research work and about 800 others had been done under his supervision.

That the development in the field of nutrition has come through the activities of the biochemists, it having largely emanated from the Agricultural Stations and the Departments of Home Economics, not from Medical schools (T. 1031); that only after work with animals has been developed and some particular relation shown, is the work applied by the M. D.'s (T. 1032); that they had conducted various experiments in the Departments and

not until 1924 did they really begin to learn something about what was needed in the proper nutrition of an animal; that the developments in the field of nutrition came from the biochemist who was close to the animals and the only other competitor in the field during the early years was Dr. Mendel at Yale and T. B. Osborne at the Connecticut Experiment Station (T. 1034); that good research work is controlled because you have animals that you can sacrifice, but clinical work always involves the humans and as a rule you do not experiment with extreme situations; that where there has been clinical work in the field of nutrition with humans, it has been with large groups of children (T. 1035); that the work of biochemist and nutritionists played a very prominent part in the medical practice; that it applied particularly to pediatrics; that the witness had done a great deal of work in scientific research concerning milk, including the chemical and nutritional properties of milk.

That milk is not a perfect food, being distinctly deficient in iron, copper and manganese for the long pull of nutrition after the period when the young has used up the stored minerals; that milk is also low in vitamin D, which is concerned with calcium and phosphorus in the development of bone and teeth; that if whole milk is reinforced with iron, copper, manganese and vitamin D, you will have a perfect and complete food and can live indefinitely on it (T. 1036); that they have demonstrated that with rats, which were not very sensitive to vitamin D deficiency, with swine, and with boys; that their research studies do not show that any other article of food could approach milk in its completeness as a diet for animals or human beings; that milk was designed for a purpose

and if we knew more about it and the things that were in it, we would hesitate about tampering with its composition in the nutrition of the young (T. 1037); that a particular sugar was found in milk and nowhere else, and a particular protein; that calcium and phosphorus were in the milk in amounts related to any particular species, depending on whether it was a slow growing or a fast growing animal. "It is designed for the particular young and selected for the particular young over long periods of evolution" (T. 1038).

That there are no doubt chemical units still unidentified in milk, such as the grass juice factor; that the constituents of milk fat are only partly known, and they sustain particular relations to the nutrition of the young, so there are probably many nutritional factors in milk that are still to be identified; that there is still progress to be made in the actual chemical units needed by an animal; that he would say that science still must depend upon certain food substances in order to prepare a complete diet (T. 1039); that the statement that one-half to two-thirds of the food value of milk is in the skim milk portion is true so far as calories go, but 35 years ago they abandoned the idea that calories determined nutritive value.

That milk is a variable source of vitamin A, the content rising and falling with the seasons and depending upon how the cows were fed, though it is not to be said that milk is not a dependable source under normal nutrition of dairy cows; that he would say there was no evidence of vitamin A deficiency in children at the age where they would get a quart of whole milk a day (T. 1040).

That the witness first became acquainted with filled milk when the Carnation Company tried to introduce it

about 20 years ago, and at that time he appeared as a witness before the Wisconsin Legislature and objected to its sale, and there has been considerable advance in the knowledge of nutrition since that time.

"Q. Has the additional knowledge of nutrition which has been acquired confirmed your views on filled milk?

A. Confirmed my views that I wouldn't want it sold, yes."

That he had conducted research studied on the comparative nutritive value of corn oil, coconut oil, cottonseed oil, soybean oil and butterfat, and hydrogenated cottonseed oil (T. 1041); that they had been conducting these studies since 1937 and had published reports.

That the first experiment dealt with the relation of fat to the utilization of lactose in milk and they found that most any oil would stop the leakage of lactose on skimmed milk; that their next publication was in the Journal of Dairy Science in February, 1940, entitled "The Nutritive Value of Butter Fat and Certain Vegetable Oils" (T. 1042); that they had seen in the early experiments that animals on the vegetable oils did not look as well as those on butterfat; that they knew skim milk would give all the water soluble vitamins the rat would need, would give excellent proteins and sugar and that if they mineralized it with iron, copper and manganese and added vitamins A, D and E, the fat would be the only variable (T. 1043).

That the experiment was shown in Plaintiff's Exhibit M (T. 1044).

Plaintiff's Exhibit M (T. 1045) entitled "The Comparative Nutritive Value of Butter Fat and Certain Vegetable Oils" by E. J. Schantz, C. A. Elvehjem, and E. B.

Hart, was introduced in evidence. The report stated that weanling rats about 21 days old were used in the experiment; that they were fed skim milk to which had been added the particular fat to bring the fat content to 4%; that 20 micrograms of crystalline Betacarotene were added to each gram of fat except butter fat, 10 micrograms being added to it; that all animals were irradiated 10 minutes each day. That for each experiment 3 males and 3 females were placed on each milk; that in the first trials butter fat, corn oil and coconut oil were used and in later trials cottonseed oil and soybean oil were used; that the results from the first experiments indicated that rats on butterfat made better gains and were much better appearing during the first 3 weeks than the animals on corn oil or coconut oil; that the litters of the females on corn oil were smaller than those on butter fat and some died; that no litters were obtained from the rats on coconut oil; that the later experiments on cottonseed oil and soybean oil gave similar results to those on corn oil and coconut oil, during the first two or three weeks; that after that period, the animals on the vegetable oils grew as well as those on butterfat but still were inferior in appearance.

The curves and graphs showing the results of the first three weeks of the experiments are as follows:

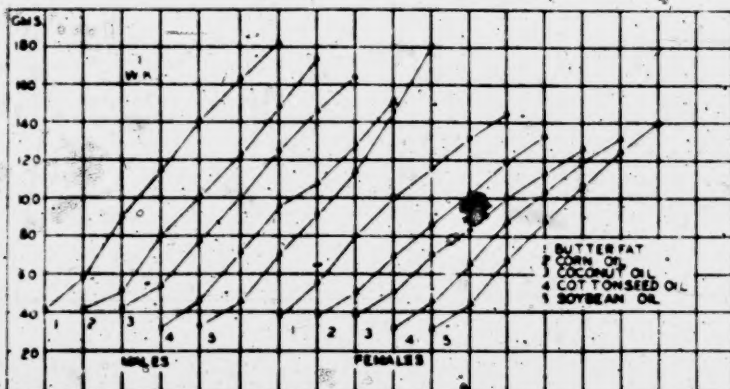


CHART I. Curves showing average weights for each week for male and female rats, representing 36 rats (18 males, 18 females) on each of the following fats: butter fat, corn oil, and coconut oil, 12 rats (6 males, 6 females) on cottonseed oil, and 6 rats (3 males, 3 females) on soybean oil.

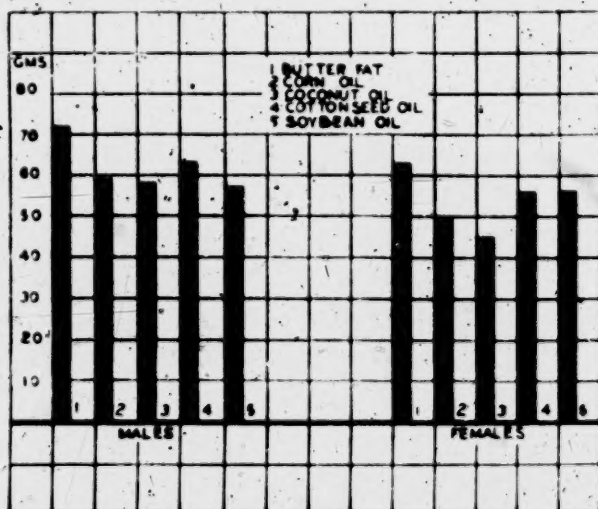


CHART II. Average gain made during the first three weeks on experiment by male and female rats representing 36 rats (18 males, 18 females) on each of the following fats, butter fat, corn oil, and coconut oil, 12 rats (6 males, 6 females) on cottonseed oil, and 6 rats (3 males, 3 females) on soybean oil.

The report showed that the gains made by the male rats on butterfat during the first three weeks were 22% greater than on corn oil, 23% greater than on coconut oil, 14% greater than on cottonseed oil and 26% greater than on soybean oil; that the non-saponifiable fraction of butterfat was added to the corn oil and coconut oil in order to make a more comparable experiment, and the rats on the fats with those fractions added showed more better response than without the fractions.

The data showing the average daily gains for each week for the rats on the four vegetable oils and the butterfat are shown in the following table:

TABLE I, EXPERIMENT 8.

Average daily gains for each week for male and female rats
(6 animals on each fat—3 males, 3 females)

Males					
Week	Butterfat	Corn oil	Coconut oil	Cottonseed oil	Soybean oil
	gm.	gm.	gm.	gm.	gm.
1	2.8	1.7	2.3	2.3	1.8
2	4.5	3.7	3.8	4.0	3.4
3	3.9	2.4	2.9	3.4	3.4
4	3.7	3.3	3.4	2.0	3.0
5	3.3	4.1	5.0	3.3	4.7
6	3.4	3.6	2.6	3.9	4.7
Females					
	gm.	gm.	gm.	gm.	gm.
1	2.6	1.8	2.1	2.1	1.7
2	3.8	3.1	3.0	3.5	3.4
3	3.4	2.9	2.6	3.1	3.0
4	3.3	2.0	1.4	2.4	2.4
5	2.9	3.4	2.7	2.0	2.7
6	2.0	2.0	2.0	1.7	2.1

The report stated that the differences in growth appeared most noticeable and consistent during the first three or four weeks, and with the exception of some variation, the butterfat appeared to be utilized more economically than the other fats. In the discussion, the report stated that while the differences in growth on the different milks were small the growth rates of the animals on the butterfat milk were consistently greater during the first two or three weeks of each experiment than on the vegetable oil foods, and after about 3 weeks those differences became less apparent; that the animals on butterfat had a better general appearance and a finer coat of hair than the others; that it appeared that the growth stimulating property of butterfat lay in the saponifiable fraction. The conclusion of the report was that good growth was obtained on the rats on all of the diets, including the butterfat and the vegetable oils, but the rats on butterfat made better and more efficient gains during the first two or three weeks than rats on the vegetable oils, and the growth stimulating properties of butterfat appeared to lie in the saponifiable fraction; that rats raised on butterfat milk had a much better appearing coat of hair throughout the experiment than the rats raised on the vegetable oil milks; that it appeared that the kind of fat in the diet was important in the nutrition of the young growing animal.

The witness stated that the pictures of the animals showed definitely the superiority of the butterfat; that the experiment showed that within the constitution of the fat itself there is something particularly efficacious and needed for the growth and the rapid growth of this young animal, and they next proceeded to find out why

these fats differed (T. 1046); that the difference in growth was not due to a difference in vitamins, but to the fat portion itself.

That it was often stated that 10 days in the life of a rat is equivalent to a year in the life of a child so that the experiment would have been equivalent to at least four years in the life of a child (T. 1047).

Plaintiff's Exhibit N (T. 1048), entitled "The Effect of Added Egg Phospholipids on the Nutritive Value of Certain Vegetable Oils," by Schantz, Boutwell, Elvehjem and Hart, a reprint from the Journal of Dairy Science, December, 1940, was offered in evidence. The report stated that an experiment was conducted with rats fed on diets containing skim milk and 4% fat, with minerals, carotene, and alpha-tocopherol added; that it was found that the phospholipid content of butter should be 0.25%, corn oil 0.07% and coconut oil 0.02% and skim milk 0.015%, and soybean oil 3%; that the experiments were made by adding egg lecithin to the corn oil and coconut oil; that the addition of lecithin seemed to improve the appearance of the animals considerably; that growth was not as good on the oils with lecithin added as on the butterfat; that it appeared that the egg lecithin improved the nutritive value of corn oil and coconut oil slightly but not enough to give growth equal to that obtained on butterfat; that, in certain instances, individuals on the vegetable oils plus lecithin did as well as those on butterfat but in most instances the growth was inferior; that it appeared that something besides the phospholipid content was responsible for the superior growth obtained on butterfat.

That the experiment showed that the superiority of butterfat over the vegetable oils did not lie in the lecithin or the nitrogenous base of the lecithin (T. 1050).

Plaintiff's Exhibit O (T. 1051) entitled "The Nutritive Value of the Fatty Acid Fractions of Butterfat" by Schantz, Boutwell, Elvehjem and Hart, reprinted from the Journal of Dairy Science, December, 1940, was introduced in evidence. This exhibit is the published report of a rat feeding experiment in which the fatty acids of butter were separated into various fractions and fed along with corn oil. The diets fed to five groups of rats contained, respectively, butterfat, corn oil, plus the saturated fraction of butterfat, corn oil, corn oil plus the volatile fraction of butterfat, corn oil plus the unsaturated fraction of butterfat, and corn oil plus the unsaturated fraction of butterfat, each diet containing in addition skim milk, carotene, alphatocopherol and minerals. It was found that the animals on corn oil plus the saturated fraction of butterfat grew faster than the animals on butterfat and considerably faster than the animals on the other diets. That group of animals also showed a better general appearance and condition of the coat during the first two or three weeks of the experiment. The report of the experiment stated that the results indicated that the superiority of butterfat in milk was due to the fatty acids contained in the saturated fraction of the fat, and was due to the long chain saturated fatty acids. "No final explanation can be offered for the observation that better growth was obtained with the saturated butter fraction and corn oil as compared with butter alone."

The witness stated that the saturated fraction consisted of acids like butyric, caproic, stearic and palmitic (T. 1052); that the records showed that the corn oil itself was made even better than the butterfat simply by the addition of the saturated fraction from the butterfat; that in the butterfat itself there were certain fatty acids

of saturated character which the animal could not get from the vegetable oils; that the experiment confirmed the earlier results as to the superiority of butterfat (T. 1053).

Plaintiff's Exhibit P (T. 1053), entitled "The Effect of Hydrogenation on the Nutritive Value of the Fatty Acid Fractions of Butter Fat and of Certain Vegetable Oils," by Boutwell, Geyer, Elvehjem and Hart, reprinted from the Journal of Dairy Science, December, 1941, is a report of a rat feeding experiment, 20 day old rats being used. Six groups of rats were fed, respectively, diets containing (1) butterfat, (2) corn oil, (3) corn oil plus saturated fraction of butterfat, (4) corn oil plus hydrogenated, saturated fraction of butterfat, (5) corn oil plus unsaturated fraction of butterfat, and (6) corn oil plus hydrogenated unsaturated fraction of butterfat, all the diets containing in addition skim milk, carotene, alphatocopherol and minerals. The weight gains during the first three weeks on the various diets are shown in Table I, which is as follows:

TABLE I.

Growth on the hydrogenated fatty acid fractions

The figures show grams gain made during the first three weeks on the experiment. Each figure represents the average of three rats.

Diet	1		2		3		4		5		6	
Sex	M	F	M	F	M	F	M	F	M	F	M	F
Expt. 22	70	62	67	58	80	69	69	73	63	63	81	75
Expt. 24	87	71	64	57			72	68			88	70
Expt. 29	72	67	60	60	80	69	76	71	73	53	90	71
Average	76	67	64	58	80	69	72	71	68	58	86	72

The report stated that the animals on corn oil and the saturated fraction grew slightly faster than the animals on butterfat and considerably faster than those on corn oil, and rats on the corn oil plus the hydrogenated unsaturated fraction grew much better than those of any other group.

In a further experiment reported in the same publication, diets containing respectively (1) butterfat, (2) corn oil, (3) 1/3 hydrogenated corn oil and 2/3 corn oil, (4) coconut oil, (5) 1/2 hydrogenated coconut oil and 1/2 corn oil, (6) cottonseed oil, (7) 1/3 hydrogenated cottonseed oil and 2/3 cottonseed oil, (8) soybean oil, (9) 1/3 hydrogenated soybean oil and 2/3 soybean oil, and (10) Crisco, were fed. The gain in weight during the first three weeks on the various diets, shown in Table III as follows:

TABLE 3.

Growth on the hydrogenated vegetable oils showing average grams gained (each figure represents three rats).

	1		2		3		4		5		6		7		8		9		10	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
3 wks.																				
(grams)	73	64	62	57	57	53	47	47	42	42	72	59	59	55	71	61	51	53	62	53
6 wks.																				
(grams)	141	128	131	111	119	98	88	90	107	89	157	113	110	107	159	113	107	98	131	106

The experiment concluded that the superior growth promoting property of butterfat was probably due to a saturated compound.

The witness stated that the hydrogenation of the vegetable fats did not improve the nutritive value; that those fats were completely hydrogenated so that the iodine number was practically nil (T. 1055).

The witness stated that he had performed an experiment using hydrogenated cottonseed oil with a melting point of 40.7 to 41 degrees C. and an iodine number of 59.8 to 59; that the rats were fed skim milk, mineralized and reinforced with vitamins A, D and E, 21 day old rats being used (T. 1057).

Plaintiff's Exhibits Q and R (T. 1058), the former a graph showing the gain in weight at 6 weeks on (1) butterfat, (2) cottonseed oil, and (3) partly hydrogenated cottonseed oil, and also showing a picture of a rat on butterfat and another on partly hydrogenated cottonseed oil, were introduced in evidence.

The witness stated that the experiment showed that the butterfat was superior to the hydrogenated cottonseed oil and the latter was definitely inferior to ordinary cottonseed oil (T. 1059).

Plaintiff's Exhibit S (T. 1062), a graph showing gain in weight during the first three weeks of an experiment with six male rats, starting out at 15 days old, fed dry rations containing respectively (1) butterfat, (2) corn oil, and (3) olive oil, was introduced in evidence.

Plaintiff's Exhibit T (T. 1062), a photograph of three rats taken two weeks after the above experiment was begun, one on olive oil weighing 63 grams, one on corn oil weighing 69 grams and one on butterfat weighing 102 grams, was introduced in evidence.

The witness produced two rats and stated that one had been fed on corn oil and the other on butterfat, and that the latter had a much thicker and heavier coat of hair (T. 1061).

Plaintiff's Exhibit U (T. 1063) entitled "Concerning A New Growth-Factor Present in the Fatty-Acid Fraction

of Butter," by Dr. J. Boer and Dr. B. C. P. Jansen, translated from the Dutch, was offered in evidence. This is a report of a rat feeding experiment in which three diets were used, one containing the fatty acid fraction of butter and the unsaponifiable fraction, one containing olive oil and the unsaponifiable fraction, and the other, butter. The report concluded that the growth on the fatty acids of butter was better than on olive oil and that the fatty acid fraction therefore contained a growth stimulating substance.

The witness testified that so far as their experiments went, butterfat had been superior to a hydrogenated cottonseed oil for the young rat.

Subject to the objection that the witness was qualified only to speak in the field of animal nutrition and was not qualified to pass on the question of the usefulness of whole milk in the diet of infants or children, since he was not a physician or pediatrician, the witness stated, "Well, I say the whole milk is absolutely necessary in the diet of infants and growing children." The same objection was made to all of the testimony of the witness along the same line.

The witness testified that the work of the biochemist opens the field for pediatricians and physicians (T. 1065); that if any work in the vitamin field originated in the medical schools, it was in the biochemical departments and not on the clinical side (T. 1066); that each branch of science, more or less, relies on the other to attend to its particular job.

Q. Now, Professor, as a result of all this work, what is your opinion as to the importance of whole milk in a diet of infants and growing children? A. It is an

absolute necessity. Since our work has been with animals, it is true, the argument would probably be made that because it has been done with animals we know nothing about its application to the human. My answer to a question like that is simply this: That since we do know these differences in reference to the animal, the substitution of some particular vegetable oil for butterfat should not be allowed until there has been a large human experience with babies, with small children where their whole source of fat has come from the vegetable side."

That the mere fact that a vegetable oil was used in making breads and in other foods would be no indication that it would be proper to use it in the diet of an infant since an infant received only milk and would have to rely on that particular fat and if that particular fat was of inferior nutritive value then you possibly jeopardized the health and well being of the infant or animal (T. 1067).

"Q. Professor, there has been some testimony in this case that this product containing hydrogenated cottonseed oil, skimmed milk and Vitamins A and D is a wholesome, nutritious food product and is noninjurious. What comments might you have to make regarding that?

A. I should give the child the benefit of the doubt on the basis of our animal experimentation. I should hesitate to expose the infants of the community to a product that has not been adequately tested in infant nutrition."

That wholesomeness means non-toxic, but it must be used in reference to the particular thing as the sole source of the diet, in which case it may become unwholesome and unnutritious.

"Q. What is the important issue from the standpoint of nutrition in human welfare in this problem of filled milk? A. Well, it is an attempt to substitute a fat, which in animals has been shown to be inferior in the early nutrition of the young. You should not jeopardize human population with such a material until we know that it is as good or better or just as good as whole milk."

That their experiments revealed that the animals did not have an optimum growth on the vegetable fats that they had on butterfat; that no one wants to submit his children to poor nutrition (T. 1069); that he did not think that one could tell by merely looking at a child, which had been fed on this product for a few weeks or a year or two, whether or not it had any deficiencies; that those things were sometimes slow in their action; that if the work of the biochemist forewarned of the conditions that might result, it would then be foolish to go ahead and utilize a product.

"Q. Based upon your long experience in the field of nutrition and your scientific knowledge, would you recommend that the sale of filled milk be prohibited? A. Absolutely. If you have evidence it gets into the channels of infant nutrition, I would prohibit it" (T. 1070).

Plaintiff's counsel poured some White House Evaporated Milk into a glass and some Milnot into another glass. The witness stated that they seemed quite alike as to their viscosity or consistency, and looked alike except that the Milnot was yellower; that the Milnot was sweeter to his taste (T. 1071); that if there was no label on the can, an ordinary milk inspector could not distinguish whether or not Milnot had cottonseed oil in it, but he might think

it was cholesterol milk; that he would object to the Milnor on that ground.

That the maintenance of a sound dairy industry was of importance to the health of the people of the country.

That he might be more capable than the ordinary layman in detecting slight variations.

Cross Examination.

On cross examination, the witness stated that they had conducted an experiment comparing raw milk, evaporated milk and pasteurized milk, the work being done jointly between his department and the School of Medicine.

Defendants' Exhibit 152 (T. 1074), entitled "The Relation of Fat to the Utilization of Lactose in Milk," by Schantz, Elvehjem and Hart, was offered in evidence. The publication was the report of a rat feeding experiment, using 28 day old rats fed skim milk and other rats fed whole milk. In other groups, various fats were added to the skim milk, lard, corn oil, linseed oil, coconut oil and hydrogenated coconut oil.

It was found that the animals on the skim milk diet did not make an efficient utilization of the sugar in the milk, but that when fats such as butterfat, lard, corn oil, coconut oil, linseed oil and palmitic and oleic acids were added, the loss of the milk sugar was prevented; that the loss was not prevented by glycerol, butyric, beta-hydroxybutyric, caproic, or lactic acids.

Defendants' Exhibit 153 (T. 1074), entitled "A Comparison of the Nutritive Values of Raw, Pasteurized and Evaporated Milks for the Dog," by Anderson, Elvehjem and Gonce, printed in the Journal of Nutrition, Volume

20, page 433, 1940, was offered in evidence. This is a report of a dog feeding experiment comparing the nutritive values of raw, pasteurized and evaporated milk. The report stated that a dog which had been kept on evaporated milk for two years showed a nutritional deficiency but when it was transferred to raw milk, it showed an immediate increase in body weight, and "it would appear that the evaporated milk was not quite optimal for growth and maintenance of the male dog"; that the pups of the female dogs on evaporated milk showed muscle dystrophy, which was prevented by the administration of vitamin E; that "it is apparent that whole, raw milk, supplemented with iron, copper, manganese and codliver oil, will allow normal growth and reproduction in dogs; however, when pasteurized or evaporated milks are used, there seems to be a limiting intake of at least two factors. One factor is related to the prevention of muscle dystrophy, since all pups born to the female on evaporated milk showed definite dystrophy if they lived until 20 days of age. Since vitamin E produced beneficial effects when therapy was started early enough, the factor concerned must either be Vitamin E or closely associated with it. The results indicate that pasteurized milk carries more of this factor than the evaporated milk." The experiment concluded that whole raw milk supplemented with minerals and codliver oil allowed good growth and reproduction in dogs, but when evaporated milk was fed under similar conditions, most of the young showed either muscle dystrophy or a hemorrhagic condition, and vitamin E was effective in curing or preventing the former; that the young born to the female on the pasteurized milk did not show such severe symptoms.

Defendants' Exhibit 154 (T. 1075), entitled "Further Studies on Relation of Fat to Utilization of Lactose in Milk," by Schantz and Krewson, was introduced in evidence. The experiment concluded that fatty acids containing 12 carbon atoms, when fed with skimmed milk, were effective in preventing sugar loss.

The witness testified that in conducting the experiment which was reported in Plaintiff's Exhibit M, the fat was homogenized into the milk by a small hand homogenizer; that 20 micrograms of carotene were added to the vegetable fats and 10 micrograms to the butterfat (T. 1079); that they did not make any test of the carotene content of the butterfat; that all of the rats were subjected to irradiation for the same length of time; that they did not know how much vitamin D was in the butter, but butter was very low in that vitamin (T. 1080); that the rats shown in Chart I of the experiment weighed about 40 grams each, except that the cottonseed rats weighed about 32 or 33 grams (T. 1081), and the soybean oil rat was a little above the weight of the cottonseed oil rat; that the chart showed that the overall gain of the soybean rats was more than any of the other rats in the experiment; that the initial weight of the female rats was 40 grams for the butterfat rats, the corn oil rats and the coconut oil rats (T. 1082); but the cottonseed oil rats and the soybean oil rats were smaller; that over the six weeks period, the latter two groups showed a good gain, but the importance of the experiments would be in the first three weeks of the rat's life (T. 1083).

"Q. Any opinion that you have expressed in your testimony in this case has been based upon these experiments, the results of which have been introduced in evidence here? A. Yes."

That the rats in Exhibit M were fed a food fortified with minerals because a rat on a skim milk or a whole milk diet would become anemic (T. 1085).

That they did not determine the solid content of the skim milk used in experiment M (T. 1088); that experiment O was conducted from March 17 to April 29, 1940; that they did not determine the carotene content of the butterfat used in the experiment (T. 1090).

The records of Dr. Hart's experiments connected with Exhibit O were introduced in evidence (T. 1091).

The witness stated that the experiments reported in Exhibit P ran from July 17, 1940, to August 29, from November 22, 1940, to January 1, 1941, from February 28, 1941, to April 11, 1941 (T. 1092), and the one with cottonseed oil and soybean oil was run from April 11, 1941, to May 23, 1941.

The records of the experiment reported in Exhibit P were offered in evidence (T. 1093).

That in that experiment, there was no attempt made to determine the solid content of the skim milk or the vitamin A and D content of the butter used (T. 1094); that to get anywhere with the experiments, you have to use a large number of rats.

"Q. You have to have a lot of experiments before you can come to any conclusion? A. That is true" (T. 1096).

That in Exhibit P, the rats on corn oil and the hydrogenated unsaturated fraction of the butterfat grew better than the rats on butterfat (T. 1097).

The records of Experiment 38 (Plaintiff's Exhibit Q) were offered in evidence (T. 1099).

The witness stated that the hydrogenated cottonseed oil used in the experiment was sent to him by Dr. Hine-

man; that the experiment was run from September 24th to November 5th, 1941 (T. 1100).

Defendants' Exhibit I55 (T. 1103) entitled "Food Value of Milk Shown in New Research Report," a report of Dr. Hart's conclusions on filled milk, was offered in evidence. It stated that more than any other food, milk was a well balanced diet and that for the growing young, only fortification of iron, copper, manganese and vitamin D was necessary for complete nutrition (T. 1103); that all of the vitamins were present in adequate quantities except vitamin D; that vitamin A might vary with the ration of the cow; that the fats of milk are of superior nutritive value and their experiments showed that butterfat was superior in the nutrition of an animal, like a rat, to the vegetable oils, and reinforcement of the vegetable oils with A, D and E would not make them equal in nutritive value to butterfat (T. 1104); that those results made it clear that filled milk should not be allowed to get into the channels of infant and child nutrition.

Re-Direct Examination.

The witness testified on redirect examination that the carotene added in the experiments was very ample (T. 1105); that the amount added to the butter was dropped because there are 7 or 8 gamma (micrograms) of vitamins A and B per gram of butterfat and about 10 to 15 gamma of carotene; that the irradiation of 10 minutes per day was very ample; that the fact that one rat might have gotten more vitamins A or D than the other would not affect the experiment, as in both instances they had the minimum requirement (T. 1106).

Re-Cross Examination.

The witness testified on recross examination that if any of the rats had a deficient amount of carotene, they would not expect good results; that the carotene was purchased from the S. M. A. Corporation and the rats came from Sprague-Dawley (T. 1107).

Defendants' Exhibit 165 (T. 1604), a letter from Professor Hart to C. Glenn Morris, was introduced in evidence. The letter is in words and figures as follows:

"University Of Wisconsin
College Of Agriculture
Madison, Wisconsin

March 30, 1942

Department of Biochemistry
Mr. C. Glenn Morris,
Columbian Building
Topeka, Kansas

Dear Mr. Morris:

In reply to your letter of March 26, I am answering the questions asked in order.

1. Do you hold yourself out as an expert in the feeding of infants of humans?

I have studied and worked for many years in the field of nutrition and feel that I am qualified to testify concerning this subject. I am now consultant for the federal government on questions of human and infant nutrition.

2. Have you practiced in the field of infant nutrition?

I am not an M. D. and do not practice any branch of medicine, but I am often consulted in reference to the questions of infant and human nutrition.

3. Will you furnish the record with the findings of the post mortem examination of all animals used in experiments about which you have testified?

No such records are available.

Very respectfully;

(Signed) E. B. Hart"

EBH:AT

Defendants' Exhibit 167 (T. 1606), a letter from C. Glenn Morris to the reporter containing information concerning the dates of Professor Hart's experiments, was introduced in evidence. The letter is in words and figures as follows:

"C. Glenn Morris
Attorney at Law
Columbian Building
Topeka, Kansas

March 4, 1942

Miss Emily F. Miles,
1912 Fidelity Building,
Kansas City, Missouri.

Re: State v. Sage Stores, et al.

Dear Madam:

Your letter of March 3rd received. You are advised that the photostats of exhibits have been mailed to you, and you should have them by the time this letter reaches you.

You will recall that Mr. Clark asked that information be supplied to him concerning the dates of the experimental period for Professor Hart's first experiment, entitled 'The Comparative Nutritive Value of Butter Fat and Certain Vegetable Oils,' Journal of Dairy Science, February, 1940. The dates for the various phases of this ex-

periment No. 1 - No. 9 are given under paragraph '2' of Professor Hart's letter, hereinafter quoted.

Mr. Clark also asked Dr. Elvehjem to get for him the source of the various vegetable oils which were used by Professor Hart in his various studies. The hereinafter quoted portion of Professor Hart's letter gives this information.

The special hydrogenated cottonseed oil, which Hart used in his later experiment, has already been identified in the record.

I presume it was desired that this information be placed in the record, and I, therefore, quote Professor Hart's letter on these questions, under date of February 27th:

Dr. Elvehjem informed me that the defense would be satisfied with the dates of the experiments involved in the paper "The comparative nutritive value of butter fat and certain vegetable oils," Journal of Dairy Science, February, 1940; and the record book for which was not available at the time of the trial.

1. In order that there be no confusion, let me add that the experiments to study the "relation of fat to the utilization of lactose" were begun in March 1937 and published in the Journal of Biological Chemistry, January, 1938.

2. The dates for the experiments embodied in the publication, "The comparative nutritive value of butter fat and certain vegetable oils," Journal of Dairy Science, February, 1940, were as follows:

- Experiment 1 - April 1, 1938 to May 9, 1938
- Experiment 2 - May 6, 1938 to July 20, 1938
- Experiment 3 - October 13, 1938 to December 9, 1938
- Experiment 5 - January 3, 1939 to February 7, 1939
- Experiment 6 - February 7, 1939 to March 21, 1939
- Experiment 7 - March 18, 1939 to April 29, 1939
- Experiment 8 - May 5, 1939 to June 16, 1939
- Experiment 9 - June 15, 1939 to July 27, 1939

It was from these records that the data displayed in the publication mentioned were derived.

In reference to the vegetable oils used, the cottonseed oil was a "Wesson" oil and purchased through Simon Brothers, Madison, Wisconsin. The soy bean oil was a crude oil donated to us by Allied Mills, Chicago, Illinois. Coconut oil was labelled "Frautschi Brothers Refined Products," purchased through the Madison Drug Company. The corn oil was "Mazola" a refined oil purchased through Simon Brothers. The olive oil was "Laco Products Inc., Baltimore, Maryland," purchased through the University Stores.

Sincerely yours,

(Signed) E. B. Hart

I am sending Mr. Clark a copy of this letter, and suggest that you place this letter in the record, if agreeable with Mr. Clark, together with any other identification he may desire to make with regard to this information.

Yours very truly,

(Signed) C. Glenn Morris.

R.
cc Mr. Boyle G. Clark,
Columbia, Missouri.

DR. CONRAD A. ELVEHJEM

(T. 1143-1187.)

Direct Examination.

Dr. Conrad A. Elvehjem of Madison, Wisconsin, stated that he was Professor of Biochemistry at the University of Wisconsin (T. 1143), having been with the University 23 years; that he received a Bachelor of Science Degree in 1923, a Master's Degree in 1924 and a Ph. D. in 1927, all at the University of Wisconsin, in the field of biochemistry; that he was a member of the American Chemical Society, American Society of Biological Chemists, American Institute of Nutrition, Biochemical Society of England, Society of Experimental Biology and Medicine, American Association for the Advancement of Science, American Public Health Association, and Sigma Xi, and a few other honorary societies; that in 1939 he received the Mead Johnson award for the most outstanding work on the vitamin B-Complex, on nicotinic acid, which award was made by the American Institute of Nutrition, an organization of about 300 leading workers in the field of nutrition (T. 1144).

That the witness and his group of workers isolated nicotinic acid from liver and showed that it was active in curing black tongue in dogs and it was immediately tried in the treatment of human pellagra (T. 1145); that he taught two courses in biochemistry, a course in enzymes, took part in seminars dealing with biochemistry and nutrition, and had engaged in scientific research for about 20 years; that he worked for a year at the Sir William Dunn Institute for Nutrition at the University of Cambridge, England; that they had worked on mineral ele-

ments in nutrition and vitamins, studying the mechanism and functioning of vitamins; that he is a member of the Council on Foods and Nutrition of the American Medical Association and a member of the Food and Nutrition Committee of the National Research Council (T. 1146); that the former was a group of experts in nutrition appointed by the American Medical Association to protect the public against fraudulent sales of foods and fraudulent advertising; that their reports advised physicians (T. 1147); that there were 12 men on the Committee, about half M. D.'s and about half biochemists.

That the American Medical Association published the book "Vitamins," which was recognized as the bible in relation to the work on vitamins; that the book was intended for the medical profession, being used by everyone interested in vitamins (T. 1148); that 31 individuals contributed to the book, about one-third M. D.'s and about two-thirds Ph. D.'s (T. 1149); that the purpose of the National Research Council was to study and correlate all known knowledge on nutrition.

That he had published about 250 papers on biochemistry and nutrition; that biochemistry and nutrition studies on animals are intimately related to human nutrition (T. 1150); that their work on nicotinic acid was applied immediately to human nutrition (T. 1151) and so were their studies on copper and iron (T. 1152).

Plaintiff's Exhibit V (T. 1153-1155), a tabulation by the witness of the known vitamins, giving their common names, their chemical names, the disease associated with deficiencies of the specific vitamins, and listing what the vitamins were necessary for, was introduced in evidence.

The witness stated that the vitamins were divided in-

to the fat soluble and the water soluble groups, the former being vitamin A and carotene, related to normal vision and perhaps to resistance to infection (T. 1155), with a daily human requirement of 5,000 International Units per day; vitamin D, which is necessary for normal utilization of calcium and phosphorus, with a requirement of 400 to 800 International Units per day; vitamin E, related to prevention of sterility and muscular dystrophy in a number of animals, although it is questionable what role it plays with humans; choline, which is fat soluble in the form of a phospholipin; vitamin K, which is associated with hemorrhagic disease, and which in some cases might be synthesized to some extent in the intestinal tract, and which we do not always have to get from food (T. 1156).

That the water soluble vitamins included vitamin C, the lack of which produced scurvy, and as to which their committee had recommended 75 milligrams a day for the average adult, B, or thiamin, the lack of which was associated with beri-beri, vitamin B2 or G, known as riboflavin, necessary for normal skin formation and normal nerve production; niacin or nicotinic acid, related to pellagra in humans; vitamin B6 or pyridoxine, the lack of which produced dermatitis and anemia in animals but the function of which in humans was not exactly known; pantothonic acid (T. 1157), which might function directly or indirectly in preventing gray hair in humans; choline, water soluble in the free form, needed for normal phospholipin formation, and possibly related to hemorrhagic kidney in the infant; biotin, the function of which in the human is still unknown; inositol, the function of which is still unknown; and para-amino-benzoic acid, reported to be of value in preventing gray hair in animals and hu-

man; that there were also certain recognized factors which were not yet characterized, not obtained in pure form (T. 1158); that there were certain factors whose biological effect could be measured but which had not been definitely isolated; that he would say there were about eight or ten of the vitamins which had been shown to be necessary in human nutrition (T. 1159).

The witness stated that the vitamins necessary for the human were A, D, K, C, B1, B2, niacin, with a question as to E, and with good preliminary evidence that B6, pantothenic acid and choline were essential in the human body; that it was questionable as to the rest.

Defendants' counsel objected to the witness testifying as to the requirements of the human because he was not qualified in that field (T. 1159-1160).

That the infant required all of the vitamins and in some cases requirements might be higher than for the human, especially as to vitamin D; that it was his feeling that some of the other vitamins might prove to be essential for humans (T. 1161); that to be assured of having sufficient of all the vitamins, a person would have to consume a balanced diet of natural food materials, including such things as milk, meat, vegetables, fruits and whole grain cereals.

"Q. How can the infant who is deprived of mother's milk be assured of sufficient vitamin intake? A. An infant, deprived of mother's milk probably doesn't have the assurance that an infant getting mother's milk has, but the next best assurance would be the use of whole cow's milk."

That all the known vitamins are present in milk, on a qualitative basis, but they differed greatly in quantity

so one did not want to accept whole cow's milk as being an adequate source of all the vitamins, though it was adequate considered in the light of what nature intended; that milk was low in D, but nature probably intended we should get some from sunlight; that milk was fairly low in B1 but high in fat, which had a saving effect on the B1 requirement (T. 1162); that there was enough C in milk if one's entire diet was milk; that the fat soluble vitamins were found in the fat part of the milk and the water soluble vitamins in the water portion; that the relationship of the quantity of vitamins in milk apparently had something to do with the other constituents in milk; that milk was rich in B6 but low in the unsaturated fatty acids, and choline was relatively low in milk but the milk protein compensated to some extent; that the longer one worked in the field of nutrition, the more impressed he was (T. 1163) with the delicate inter-relationships of all the nutrients of milk; that he would hate to tamper with natural foods in the dietary of the human.

Q. In the light of the discussion and your experience and knowledge, would you say without any evidence as to its adequacy that Milnot or a similar compound could safely be substituted for whole milk in the diet of infants? A. I wouldn't want to substitute it for whole milk until I had complete proof available and shown to me that it could be substituted without deleterious effects. In order to do that, of course, it would take experimental work with humans, but in the light of the work that has been done in our laboratory, which indicates there is a difference between vegetable oils and butterfat, which can be demonstrated on animals, I think the time is still premature to attempt to apply this product to human nu-

trition. We ought to produce the best product we can from experimental work on animals before such a product is applied to human nutrition.

Q. In other words, until the experimental work on animals shows that it is superior to the milk product, it shouldn't be tried, is that correct? A. I think that is the indication, yes. Certainly it would save a lot of time and energy.

Q. Or that it is as good? A. That is right."

That he took part in the research studies reported by Professor Hart and agreed with the conclusions.

Q. On the basis of this work, what is your opinion as to the need for butterfat in the diet of the infant? A. Well, I would like to put butterfat in the diet of infants, and I certainly would and have put butterfat in the diet of my children."

Cross Examination.

On cross examination, the witness stated that the best way of getting vitamins was through natural foods, although he had no objection to using synthetic vitamins; that the only logical way to use vitamins was by fortifying natural foods; that milk came the closest to supplying the vitamins necessary for human life (T. 1166); but was not sufficient in itself under modern civilization; that if an adult took four or five quarts of milk a day he would probably get an adequate supply of most of the nutrients (T. 1167).

Defendants' Exhibit 157 (T. 1169-1182), entitled "Vitamins—Their Respective Sources, and Physiological Values" by C. A. Elvehjem, was offered in evidence. The article stated that very few people had a clear cut con-

cept of the value of vitamins in normal nutrition; that many new vitamins had been discovered and that there were still many to be discovered; that picturing animals to show certain deficiencies was valuable in associating specific syndromes with specific factors, but had certain limitations, because symptoms might vary from animal to animal, and especially from animal to man; that minor deficiencies might take place before the more drastic conditions developed; that the vitamins could be divided into the fat soluble and the water soluble groups; that the paper discussed these vitamins; that there was a close relationship between certain vitamins and certain food industries; that the milk industry had realized that milk was low in vitamin D, so they were adding it to a large part of the milk supply; that there was no reason why bread should be a complete food (T. 1179), and he saw no objection to using white flour or products made from white flour, provided they recognized their limitations, although the situation might be more serious in areas where a large part of the diet was made up of white bread (T. 1180); that there was no fundamental objection to the addition of synthetic vitamins to food materials (T. 1181).

That the first indication that choline was essential in nutrition came from the University of Toronto, on animal studies, and recently he had received a personal communication from Dr. Griffiths and his medical group at St. Louis University (T. 1183).

That the Wisconsin Alumni Research Foundation, which, along with the Evaporated Milk Association, and the National Dairy Council, had supported certain of their experiments, was organized to take care of certain

patents of discoveries made by professors in the University and some of the income was used to support experimental work; that most of the patents were related to irradiation of milk; that he thought the Evaporated Milk Association was an organization of milk evaporators, and that Dr. Nineman, who had been attending these meetings, and Mr. Snyder, their counsel, were representatives of that association (T. 1186).

Defendants' Exhibit 166 (T. 1605), a letter from Dr. Elvehjem to C. Glenn Morris, was introduced in evidence. The letter is in words and figures as follows:

University of Wisconsin
College of Agriculture
Madison, Wisconsin

March 28, 1942

Department of Biochemistry
Mr. C. Glenn Morris,
Attorney at Law,
Topeka, Kansas.

Dear Mr. Morris:

Professor Hart has shown me your letter of March 26 and asked me to answer the three questions which you raise.

1. Do you hold yourself out as an expert in the feeding of infants of humans?

I am not an expert in the practical feeding of infants and humans, but I have acted as an advisor in nutrition problems involving both infants and humans for many years.

2. Have you practiced in the field of infant nutrition?

I am not an M.D. and do not practice in any branch of medicine, but I have been called upon for advice in the field of infant nutrition by numerous medical people.

3. Will you furnish the record with the findings of the post mortem examination of all animals used in experiments about which you have testified?

No such records are available.

I hope that this will answer the questions that you have raised.

Sincerely yours,

(Signed) C. A. Elvehjem

DR. T. W. GULLICKSON

(T. 1187-1213.)

Direct Examination.

Dr. T. W. Gullickson, St. Paul, Minnesota, testified that he was Assistant Professor of Dairy Husbandry at the University of Minnesota, having been at the University since 1920; that he was engaged in dairy production, dairy feeding, and teaching; that he received a B. S. Degree from the University of Minnesota in 1918, an M. S. Degree in 1922 and a Ph. D. in 1934; that he was a member of the American Dairy Science Association, American Society for the Advancement of Science, Alpha Psi (T. 1187), Gamma Sigma Delta, Sigma Chi, and Gamma Alpha.

That he taught dairy stock feeding and engaged in research in dairy production, and had published about 50 reports of his research, the studies dealing with the minimum requirements of cattle, and general dairy subjects; that they had fed certain vegetable oils to calves and that represented his extent of study of vegetable oils (T. 1188).

That the studies with the feeding of oils to calves were taken up from the standpoint of trying to produce a veal more economically, by substituting a vegetable oil for the butter fat in whole milk (T. 1189); that they conducted experiments using soybean oil, corn oil, cottonseed oil, peanut oil, coconut oil, lard, tallow and butterfat.

That the experiments were conducted by feeding diets containing warm skimmed milk to which had been added the particular oil, bringing the mixture to 3 1/2% fat, the combination being homogenized (T. 1190) in a machine applying 3,000 lbs. pressure; that they added cottonseed oil and vitamin concentrates to supply vitamins A and D (T. 1191).

Plaintiff's Exhibit W (T. 1193), a reprint from the *Journal of Dairy Science*, Volume XXV, No. 2, pages 117-128, entitled "Various Oils and Fats as Substitutes for Butterfat in the Ration of Young Calves," by Gullickson, Fountaine and Fitch, was offered in evidence. This was a report of the calf feeding experiment referred to by the witness.

The witness stated that alfalfa hay and concentrates were fed when the calves were about a month old, but some of the calves did not receive alfalfa at all although most of them did; that there was no particular selection on that; that the experiment was run at various times during the year (T. 1194).

That the number in each experiment varied from one to a dozen or more; and the ages ranged from 6 months to much older, the majority being about 2 weeks old when the experiment was started (T. 1195); that at the conclusion of the experiments post-mortems were conducted; that some calves due to their poor condition had to be

put on whole milk; and some of the calves died and one on butterfat died (T. 1196); that they did not know the exact origin of the various animals used.

That the two calves in the whole milk group had an average gain of 1.43 pounds per day, those in the butterfat group 1.22 pounds, those in the low fat group 1.07 pounds (T. 1197), those in the lard group 1.17 pounds, the tallow group 1.24 pounds, the coconut oil group .96 pounds, the peanut oil group .80 pounds, corn oil group .40 pounds, and four that survived in the cottonseed oil group .31 pounds (T. 1198); that the data showed that the animal fat group gained consistently more than the vegetable oil group and the whole milk and butterfat group had a much better appearance (T. 1199); that two animals made remarkable recoveries when they were shifted to whole milk (T. 1201).

Plaintiff's Exhibit X (T. 1203), a picture of a calf in the corn oil group, was offered in evidence.

Plaintiff's Exhibit Y (T. 1203), a picture of one calf in the butterfat group and one on corn oil, was offered in evidence.

The witness stated that the calf on the cottonseed oil was skinnier and scrawnier looking than the one on the butter fat (T. 1204).

Plaintiff's Exhibit Z (T. 1205), a picture of one calf on cottonseed and one on whole milk, was offered in evidence.

Plaintiff's Exhibit AA (T. 1207), a picture of a calf on whole milk and one on corn oil, was offered in evidence.

That he believed the experiment was gotten under way in the spring of 1938; that they contended that it was not profitable in the production of veal to feed vegetable

oils (T. 1208), and he had not yet found anything equal to butterfat in the feeding of calves.

Cross Examination.

The witness testified on cross examination that the experiment was not conducted for the purpose of determining the value of milk as a substitute food but to determine whether a substitute food could be used in the feeding of calves to prepare them for market. That milk for a calf was not a substitute food but was its natural food.

"Q. And you wouldn't expect any substitute food to give the same results as a natural animal food? A. Well, I don't know. I am not qualified in nutrition."

That the conclusion of the experiment would be that they could not substitute a fat for butter fat and expect a product that would take the place of whole milk (T. 1210).

Defendant's Exhibit 158 (T. 1211), entitled "THE USE OF VARIOUS OILS AND FATS FOR CALF FEEDING," by Gullickson and Fountaine, an abstract from the *Journal of Dairy Science*, Volume 22, No. 6, page 471, was offered in evidence.

DR. A. G. HOGAN.

(T. 1215-1260.)

Dr. A. G. Hogan testified that he lived in Columbia, Missouri, was a professor in the University of Missouri, and had received A.B. and A.M. degrees there, and a Ph.D. from Yale University specializing in physiological chemistry; that he was a member of the American Association for the Advancement of Science, American Chem-

ical Society, Society of Experimental Biology and Medicine, American Society of Biological Chemists and American Institute of Nutrition, being president of the latter organization; that he had been at the University of Missouri twenty one years and taught biochemistry, the application of chemistry to animal and plant life, and taught nutrition (T. 1216), which is the application of chemistry, physiology and anatomy to the relation of foods of animals and plants; that he taught the chemistry of the vitamins and engaged in research study in biochemistry and nutrition, and had published 60 or 75 papers in the field of nutrition, the papers being confined almost entirely to the problem of unidentified vitamins required by various species of animals.

That fat is a compound containing one molecule of glycerol with three fatty acid molecules and as ordinarily used fat is the organic compound present in plants or animals and soluble in either or similar solvents; that about two or three percent of bodies are not true fats but are commonly spoken of as fats (T. 1216); that fatty acids are widely distributed and are divided into the saturated group and the unsaturated group; that there are not large differences in the number of fatty acids in various fats but there are large differences in the degree of saturation; that the physical properties of fats depends on the kind of fatty acids present; that butterfat is unique as it contains a large percent of butyric acid (T. 1217), has a lower melting point than most animal fats and a higher melting point than the plant fats; that vegetable fats and butterfats do not have the same effect upon the body; for example, swine fed a considerable quantity of sunflower seed oil had fat which, when rendered out, still

remained liquid; that one could not assume that any other fat or oil could serve the same purpose as butterfat in the growth of animals or young humans because the nutrients other than fatty acids and glycerols may have an effect upon the metabolism of the body (T. 1218).

That "digestibility" refers to the breaking down of molecules in the process of digestion and has no particular reference to nutritional value; that "wholesomeness" indicates that a nutrient can be used to keep the body in a normal condition, any nutrient that could be used by the body being regarded as wholesome; that "nutritive value" indicates the kind and amount of nutrients that a food contains; that digestibility and wholesomeness are not the entire measure of nutritive value (T. 1219); that diseases are caused both by the presence of undesirable substances in food and by the absence of substances; that, for example, absence of vitamin A causes an eye disease, deficiency of vitamin C causes scurvy and deficiency of vitamin D would result in rickets; that these are usually manifestations of gross deficiencies and there are also slight deficiencies which could be detected only by rather technical methods (T. 1220); that it is the common opinion that partial deficiencies lower the efficiency of the body, but it would be uncommon for them to be detected.

That the fact that vegetable oils are just as digestible as butterfat and have the same energy value does not mean that they have equal nutritional value (T. 1221); that phospholipins are similar to fats, and contain fatty acids, phosphoric acids and nitrogenous bases; that they believe they are essential in practical nutrition; that whole milk contains phospholipins and upon separation of the

cream, practically all of them accompany the butterfat and are removed from skim milk.

That sterols are solid alcohols and are essential in human nutrition and it is common knowledge that plant sterols are not absorbed as readily as animal sterols (T. 1222); that they are present in whole milk but not to a large extent in skim milk, being removed with the cream; that the addition of hydrogenated cottonseed oil or any vegetable oil would not replace them but the fat soluble vitamins are A, D, E and K; that choline in milk fat is soluble, is part of the phospholipins and would accompany the butterfat; that the fat soluble vitamins have a number of functions, one of the best known functions of vitamin A being the production of the mucous membrane guarding against infection and keeping the vision normal. (T. 1223); that vitamin D is concerned with metabolism of calcium and phosphorus; that the first discovery in connection with vitamin E was that its insufficiency in the diet of rats would cause sterility and young rats would become paralyzed; that in the chick the symptoms are decidedly different, a portion of the brain being destroyed; that so far as man is concerned there is practically no information as to its function but it was presumed that muscle dystrophy would be the chief result; that the only function ascribed to vitamin K was to keep the blood in normal condition, especially blood hemorrhages being produced in a chick by its absence (T. 1224); that the functions of choline were obscure in some respects, its absence affecting egg production of chickens and causing fatty livers in rats on diets high in fat; that if it were deficient in the diet young chicks and rats would not grow at the normal rate; that Dr. H. P. Smith at the University of Iowa re-

ported that the amount of vitamin K in cow's milk was not large but was sufficient for the human infant (T. 1225).

Over the objection that the witness should not testify as to what was needed in the infant diet but should be confined to the field of his science, he being a biochemist and dealing with animals, the witness testified that they believed that the lack of vitamin K was one of the most common causes of mortality in newborn babies and its administration, if it came early enough, would prevent hemorrhage due to a deficiency of phospholipins; that in all probability cow's milk would supply the required vitamin K; that all of those fat soluble vitamins were present in whole milk, although vitamin D was not present in large amounts; that all of those vitamins would be separated almost completely in the separation of cream from milk (T. 1226); that the nutrients removed in whole or in part with the cream in the separation of whole milk and not replaced by hydrogenated cottonseed oil or fish liver oil were vitamins E and K, choline and the other phospholipins and sterols, and it was common opinion that a small part of vitamin B and riboflavin was absorbed on the fat globules removed from skimmed milk.

That research and biochemistry in animal nutrition was indispensable in the field of vitamins in human nutrition, practically all of the fundamental information on vitamins being obtained by biochemists through research on laboratory animals; that after something was learned about the vitamins they were applied to human disease (T. 1227); that examples were vitamin A, vitamin D and nicotinic acids, Dr. Elvehjem of the University of

Wisconsin having demonstrated that black tongue in dogs was caused by those deficiencies and then that was applied to pellagra in human nutrition; that vitamin C was a similar case, only two animals, guinea pigs and monkeys, requiring it and man likewise being subject to scurvy in its absence (T. 1228); that the disease of beri-beri caused by lack of vitamin B was first demonstrated on pigeons and chicks; and then applied to human bodies; that all of the vitamins necessary in nutrition had not been identified, and they had made numerous unsuccessful attempts to raise animals on diets containing only the identified vitamins; that on such diets rats would grow at a normal rate but there would be a considerably smaller number of litters than would be expected and the mortality among the young rats would be exceedingly high (T. 1229); that similar results were obtained on chicks and guinea pigs and swine, and the addition of a crude vitamin carrier would result in normal growth (T. 1230), such a carrier being an extract of natural food stuffs. (T. 1231).

That animals and humans could be assured of obtaining an adequate diet by properly selected natural food stuffs; that the most critical period from a nutritional standpoint in the life of an animal was the period between birth and weaning and that there was no food or combination of foods that they knew which could adequately replace milk during that period of growth; that they had never succeeded in finding one (T. 1232).

That he was acquainted with Professor Hart of the University of Wisconsin and with Dr. C. A. Elvehjem of that University and they were most eminent men in their fields, and he was also well acquainted with Professor J. S. Hughes of Kansas State College, he also being

an outstanding chemist and scientist; that he was acquainted with Professor Hart's work on the nutritive value of butterfat and vegetable oils and with Dr. Hughes's experiments with evaporated milk and Defendants' product (T. 1233); that he was also acquainted with Professor Gullickson's experiments with butterfat and vegetable oils and the experiments of Boer and Janzen, and that they all agreed in showing that butterfat was of superior nutritional value to vegetable oils; that based on his long experience in nutritional research, those experiments were unanimous in indicating that whole milk should not be replaced by using vegetable oils instead of butterfat in the diets of infants and children; that the unnecessary processing of foods should be discouraged as much as possible, it seeming clear that some nutritional diseases were due to commercial processing of foods (T. 1234).

That by the manipulation which Milnot underwent, an inferior product was the result; that it was a very clever method of buying cheap milk, cheap cottonseed oil, and then selling it at a price competing with milk; that in his opinion the chief objection to the product was that it replaced whole milk to a certain extent, making it possible to secure a high price for relatively low priced raw materials.

Cross Examination.

On cross-examination the witness testified (T. 1235) that in stating that his chief objection to the product was because it displaced whole milk was not based exclusively on the economic side and that he took nutritional value into consideration; that white flour and polished rice were more useful than the cruder products, but it was practically impossible to mill whole wheat flour unless it was

sold immediately because it deteriorated (T. 1236); that nutrition has no connection with price but the kind of nutrition a person could obtain depended largely upon economic position; that if he were poverty stricken and could not buy Grade A milk he would recommend the use of powdered milk and if he could not buy that he would recommend powdered skimmed milk, that if he could not buy that he would not buy Milnot but would buy skimmed milk and get cottonseed oil at the store, not necessarily mixing them (T. 1237); that he would put them in his diet at a lower price.

That he had no objection at all to cottonseed oil, and it had been used as a food for a hundred years; that to a large extent what an animal consumed depended upon habit (T. 1238).

Q. Now, in your experience in the field of nutrition, you have confined yourself entirely to animal experiments, have you not? A. Entirely.

Q. Any expression of opinion you have made here is confined entirely with your experience in animal feeding? A. My own experience, yes.

Q. Do you hold yourself out as an expert in the feeding of infants of humans? A. I do not.

Q. Have you practiced in the field of infant nutrition? A. I have not."

That he testified in the Circuit Court of Boone County, Missouri, in the case of Carolene Products Company against Jewell Mayes; that he knew Dr. Harris of Massachusetts Institution of Technology, who is a reputable scientist but not of the same eminence as Professor Elvehjem or Professor Hart (T. 1240); that the latter two had confined their study and experiments to animals

and had no experience in the feeding of infants; that, he agreed with the statement in the introduction to the book "The Vitamins," from which Dr. Elvehjem read; that investigations indicated that it was not possible to argue *a priori* that a vitamin deficiency would produce effects in a human being just because it had produced those effects in an animal (T. 1241).

That he agreed entirely with the statement at page 151 of "Food and Life," the Year Book of Agriculture for the year 1939, at page 151, which was as follows: "In the intervening years, the use of the rat has been extended to more and more new lines of work, and there is no reason why this should not continue. The rat has served admirably. Though other animals might serve just as well in a number of respects, no other single animal would serve better. However, that is just the difficulty with rat experiments. No single species of animal can serve as a trial horse for all living things. The rat is, after all, a rat, and possesses its own distinct physiological individuality just as any other animal does. If we had to depend upon the rat as a sole experimental animal, Vitamin C would never have been discovered. The rat gets along very well without this vitamin, being immune to scurvy. On pellagra-producing diets, rats do not thrive, but they do not develop typical pellagra. Diets sufficiently low in Vitamin E to produce complete sterility in rats support normal health and reproduction in rabbits and goats. A percentage of cod liver oil in simplified diets which promotes growth and good health in the rat, many kill guinea pigs, rabbits, sheep, and goats. The rat, like man and dog, goes to sleep under morphine, but cats and horses go wild. In its response to pituitrin,

the rat uterus resembles that of the guinea pig and mouse, and differs from that of the rabbit. Histamine relaxes the rat uterus, but contracts the uterus of every other species. For the maintenance of pregnancy, the corpora lutea (yellow bodies) of the rat are (T. 1242) essential for the entire period of gestation, just as they are in the mouse and rabbit, yet in the guinea pig, monkey, and woman, the corpora lutea can be removed early in pregnancy without resulting in abortion.

It would be possible to recite a great many other characteristics that make for the individuality of the rat, just as it would in the case of any other animal."

That he did not agree entirely with the statement in the same book that they simply could not apply to one species of animal conclusions derived from experiments on another; that everyone agreed that a deficiency of the vitamin on one animal might have a different manifestation on another, and that a vitamin might be required by one animal and not be required at all by another, vitamin C and nicotinic acid being excellent examples that man and swine required the latter vitamin but rats and chicks did not; that the same applied to vitamin E, and the deterioration of the cerebellum in the chick from the absence of vitamin E did not occur so far as they knew in any other animal; that the final test as to whether a vitamin was required by man could only be decided by trial and error (T. 1243); that the vitamin deficiency was characterized in laboratory animals and then medical men tried them on man to see whether or not they would work; that the important point, however, was that as far as he could recall they did not know of a single case of a vitamin required by any animal that was not required

by man; that this applied to vitamins A, B, C, and D; that vitamin E was required by the rat, the chick, the guinea pig and the rabbit, but they had no evidence that the ox or sheep or swine required it; that riboflavin was required by man and all animals except the ox and the sheep; that they had no evidence, as far as he could think of, as to whether the other water soluble vitamins were required by man or not, it being impossible to submit them to experimental procedures that would decide that point; that they knew positively that vitamin K was required under certain conditions by man; that they had no positive evidence that any recognized vitamin was not required by man (T. 1244).

That in his opinion it would be folly to take experimental data obtained with an animal and disregard it in problems of human nutrition "unless you had evidence that it was safe to do so."

That he remembered that Dr. Harris testified in the Columbia case as to the experiment he made with rats concerning Milnut and Evaporated Milk, and that the witness had testified with reference to that experiment (T. 1245).

At this point counsel read from the record in the case referred to, where Dr. Harris testified that certain animals were fed Milnut and others evaporated milk, and others a stock diet, and at the end of the 70 days experimental period, it was concluded from the experiment that since the rats fed on Milnut grew better, consumed more food and developed less anemia, that there was a nutritional substance in it superior to evaporated milk, and in which case Dr. Hogan had testified that that experiment had no bearing on the suitability of the product for a long-time

use by man since there was a serious primary deficiency of minerals, and that the ration mentioned had only one value, determination of vitamins A and D, but as far as the gross nutritional value of the ration when applied to man, no one hoped that it had that value (T. 1249).

"Q. That is correct, isn't it, anyway? You wouldn't count an experiment with rats as having nutritional value, practically speaking, in determining its value for man?

A. Without a trial on man itself."

That all they knew about the vitamin requirements of man was indicated in the first place by a trial on laboratory animals; that there was a negative side to that and if an experiment on a rat or any animal gave a positive indication as to a vitamin requirement it would be folly not to take that into account in human nutrition; that it would certainly not give a final, positive and complete answer but it might give an answer until you applied it to a man; that there were other things besides vitamins which you considered in nutrition (T. 1249); that he doubted if he ever said that a rat experiment could only be used to study vitamins.

That the biological value of proteins and their energy value, and they believed also the mineral requirements as determined by rats, would apply directly to man (T. 1250). That if an experiment with rats showed that barley flour was better than wheat flour (T. 1251) and then a feeding test on humans showed that the wheat flour was better, he would say that the latter test should be used; that his chief objection to Dr. Harris' experiment was that he did not add minerals to the milk, and they knew that normal whole milk was deficient in iron and might be deficient in manganese and copper (T. 1252);

that if he were to conduct an experiment concerning the nutritive value of Milnot and evaporated milk, by feeding it to rats, he would insure first that both had an adequate mineral content (T. 253); that he would still say that such an experiment was simply advisory and not conclusive as to whether the product was good or bad for human consumption, and they also knew that the vitamin requirements of the rat were much simpler than those of man.

Q. Doctor, I believe you have stated that you know nothing of the nutrition of babies or infants, human infants. If this product had been used for a considerable length of time in the feeding of infants and proved entirely satisfactory and the pediatricians so found (T. 1254) then that result would influence any opinion that you might have about its usefulness as a human food, would it not? A. It would. I would only make this comment, that it is necessary to repeat an investigation of that kind, as in the experience I have had with an animal. With animals, one or two may thrive on a diet when the vast majority will not do well. And so in applying this to the human infant, it would be necessary to observe a considerable number of infants, and I think it should be done under the direction of several qualified pediatricians.

Q. If the experience of pediatricians in feeding that product had included its use by hundreds of pediatricians and thousands of babies over a period of 15 or 20 years, without bad result, and had resulted in its acceptance as a food for infant feeding, you would give that weight superior to a rat experiment, wouldn't you? A. I know nothing whatever about their product.

Q. Just assume what I have said. Then you wouldn't pay much attention to the rat experiment, would you?

A. If it were supported by what I regarded as a sufficient number of children, infants, and by pediatricians of established reputation, I would give it weight.

Q. And you would give it more weight than some rat experiments performed in the basement of a university building, wouldn't you? A. Yes. (T. 1255).

Re-Direct Examination.

On redirect examination the witness testified that his objections to Dr. Harris' experiments were that the mineral content had not been controlled and the rats were rather heavy when he began (T. 1256); that the deficiency of iron in the diet caused anemia and in the absence of other data they would assume that the difference of iron in the two products would account for the experimental differences; that as he recalled, Dr. Harris published a paper on food research in 1940, describing that data where he began with rats about two-thirds grown (T. 1257) and those receiving Milnut gained more rapidly than the butterfat rats, and in Detroit he made a second report, in which he conducted a 113 day experiment with rats, which had just been weaned, and he reported that up until the age of 85 days, the rats on the butterfat ration gained more rapidly than those which received olive oil or coconut oil; that the age of the rat might have an important bearing upon the response it made, and, in all of the trials he was familiar with, when the experiments were conducted with young animals, they gained more rapidly on butterfat than on vegetable oils, but when the animals were approaching mature weights, those differences apparently did not exist and that agreed with the experiments of Hart and Hughes; that the best insurance

man could have of obtaining an adequate diet was to consume natural food stuffs with as little manipulation in handling as possible (T. 1258).

Re-Cross Examination.

On recross examination, the witness testified that it was a controversial question whether Pasteurized milk was as good as whole milk or raw milk and that the Wisconsin people took the position that summer milk at least, that had been Pasteurized, was inferior to whole milk; that they said that evaporated milk was inferior to both Pasteurized and raw milk; that he did not intend to recommend that ~~the~~ sale of evaporated milk should be stopped simply for that reason and he would not prohibit the sale of highly milled white wheatflour ~~just~~ because some of the elements were taken from it in the course of processing (T. 1259); that in practice it was necessary to take into consideration the habits of people in the use of food and that its use by the consuming public should be taken into consideration (T. 1260).

DEFENDANTS' REBUTTAL EVIDENCE.

DR. ROBERT S. HARRIS:

(T. 1625-1660.)

Direct Examination.

Dr. Robert S. Harris testified that he lived in Belmont, Massachusetts, was associate professor of Nutrition and Biochemistry at the Massachusetts Institute of Technology; that he had a degree of Bachelor of Science and a degree of Doctor of Philosophy from the Massachusetts Institute of Technology; that he taught four courses at the Institute, the first one to juniors in food chemistry;

the second in nutrition to seniors; and the other two, advanced and applied nutrition, to graduate students. (T. 1625); that he was entirely in charge of these courses; that he was in charge of the nutritional biochemistry laboratories at the Institute, which employs at the present time twelve full-time research investigators, four of whom are Doctors of Philosophy, and the research of that group is divided in most of the fields of nutrition. One group is working on the analysis of proteins for amino acids, a second group is working on fat problems, the analysis of natural fats, and the measurement of the effect of these on the nutritive value of dietaries; another group is working on ration problems for the Air Force, and another group is working on the problem of feeding of large masses of the population; and another group is working on the nutritional requirements of women during pregnancy (T. 1626).

That he had been connected with the publication of articles, perhaps thirty-five or more, in the field of nutrition, having to do with vitamins and proteins and fats, and the overall feeding of people.

That he belonged to the American Institute of Nutrition, the Academy of Physical Medicine; is a director of the Academy of Physical Medicine, the New York Academy of Science, the American Chemical Society, the American Association for the Advancement of Science, the American Public Health Association, the Institute of Food Technologists, and several similar organizations. That he belongs to the Honorary Public Health Society, the Delta Omega, and to the Honorary Scientific Society, Sigma Psi. That in connection with the war effort, he was serving as a member of the Committee on Nutrition in Industry of

the National Research Council, which is concerned with the current nutritional problems in the feeding of industrial workers. That he was serving as a collaborator with the United States Department of Agriculture in an attempt to develop for the School Lunch Program some type of food substance that might be used to assure the complete nutrition of children under this program (T. 1627). That out of this effort they have developed what is known as "soup powder," which contains in one cup of soup all of the vitamin and mineral requirements of a child up to twelve years, about one-sixth of the protein requirements.

That he has just completed a study in Michigan in which 1,000 school children were appraised nutritionally early in February, and which were re-examined again last week; that these children had been receiving five days a week this food supplement and they were studying the result which would take several months (T. 1628).

That "it should be remarked that a significant portion of this soup mixture is skimmed-milk powder, which we consider to be, let us say, one of the least expensive and most nutritious foods available to mankind" (T. 1629).

That for some time he had been serving as a consultant for the British Food Mission, and had been functioning for the National Research Council with the Army and Navy on their emergency ration problems (T. 1630).

In connection with experiments which he had conducted in comparing the nutritional qualities of vegetable fat and butterfat, the witness stated that it was reported in "Food Research," 1940, Volume V, pages 177 to 184, that when two dietaries were fed to two groups of rats for a period of 90 days, the dietary containing coconut oil

produced a slightly superior growth in a group of 25 rats to the dietary containing butterfat (T. 1630); that in addition to the two fats mentioned, the diets contained extracted milk powder, extracted yeast, additional amounts of iron and vitamins A and D; that the animals were started on the experiment when 120 days old, corresponding to the age of a 12 year old child.

That they repeated the experiment, using rats about 26 days of age, shortly after weaning, and found that the butterfat group showed superior growth and that experiment was reported at Detroit; that they had not published that work because they decided first to extend the work and run the experiment from the age of 26 days through 120 days, and then to shift the fats fed to the various groups in an effort to find out if it was desirable to make a change from butterfat to some other fat as they got older, if it was true that butterfat was better for very young animals, and the papers showed that it was perhaps not so good for older animals (T. 1631); that they repeated that work with a very large number of animals and were surprised to find that they did not repeat the result they reported in Detroit, or in the published paper; that he thought the explanation was found in the fact that they got different results if they used different samples of butterfat; that they were in the midst of a larger experiment, having had their confidence shaken in the Detroit report, and they don't know what the real answer is; that the witness thought it should be said that there may be some advantage in butterfat and that has not been at all proven.

That the interesting observation that might be made from the paper of Doctors Hart, Elvehjem and Shantz,

and it might be a very important observation, was that they reported superior growth with vegetable oils to which had been added an active principal from butterfat and that might prove that filled milk containing a certain quantity of butterfat and another definite quantity of vegetable oil was superior to evaporated milk; that the paper did indicate that maybe a blending of vegetable oil and something from butterfat would produce a superior food (T. 1632).

That it should be observed that that experiment conducted with cottonseed oil was not conducted at the same time as the experiment with butterfat and the group of animals in the cottonseed oil group had an average weight definitely less, and those two facts were rather serious weaknesses in the paper; that the results would have more significance if obtained on comparable groups of the same age and litter mates, conducted at the same time; that they have taken evaporated milk and products like Milnot and Carolene and fed them without any supplementation to comparable groups of animals and had observed that all the animals developed anemia and eventually many died; that indicated that there was something missing in both evaporated milk and in a filled milk and it indicated to a pediatrician that he should not rely on either to feed an infant without supplementation; that in the Hart experiment the reconstituted milk and the other products were supplemented by iron, manganese, copper and vitamins A and D (T. 1633), those happening to the five things that are the five dominant weaknesses of milk; that one might ask whether it was fair to add the five weaknesses to evaporated milk and then compare that with a single product, which might have other weaknesses.

That there was considerable danger in taking an experiment like that and projecting it into the human species, and that if he were to try to conduct an animal experiment for a pediatrician to take, he would try to imitate in the dietary of the rat what actually happens in the diet of infants, such as adding citrus juices (T. 1634), cereals, pureed vegetables, fruits and other foods; that by that experiment he would predict that it would be absolutely impossible to show any difference between the vegetable oil product and milk.

That in Dr. Hart's experiment he found no real difference between the two groups of rats at the end of three days, which would correspond with 21 months in the diet of an infant, and at which time the diet would be varied and milk would be only a small portion of it; that in similar experiments they have found that on a continuation of the experiment the advantage that showed up most strongly at three or four weeks was very largely lost as you got toward the adulthood of the rat.

That there is a question as to whether it was important that a child, or a rat, should grow very rapidly during a certain period of his life (T. 1635) if at adulthood he attained the same weight; that, for instance, a group at Cornell was of the opinion that a slow rate of growth was an advantage to the human and to all animals over a rapid rate of growth; that, if a pediatrician, he would rather wait for an experiment where the dietary of the infant was duplicated in the rats and he would predict that no evidence would come out of such an experiment that there was a difference in the two foods (T. 1636).

Cross Examination.

On cross examination the witness testified that a repeat (T. 1656) of the second experiment he had referred to showed the vegetable oil rats and butterfat rats to be identical; that that was a repeat of the second experiment using 25 day old rats and feeding them an extracted skim milk product with coconut oil, with butterfat, with olive oil and with cottonseed oil, and at the end of 3 or 4 weeks they could find no significant difference in the groups; that as he explained they first had evidence that the butterfat was better and then repeated and found evidence that there was no superiority and now they were trying to find the real truth; that they do not know which way the conclusion will be.

That in the third experiment they used 80 rats in a group instead of 25, making their data a little more significant, and then they got no difference in the results; that that experiment had nothing to do with human beings, and they therefore did not supplement it with fruit juices, because they were trying to find if there was some difference as far as rats were concerned (T. 1657); that for the same reason there was no reason for Hart to use fruit juices, but that if anybody was going to take the Hart experiment and translate it into human beings, it would have to be done over the way he suggested, because that experiment had no application whatever to human beings.

That their group was interested in the feeding of populations and the question was whether butterfat, an excellent food, was a replaceable fat in the dietary (T. 1658); their objective being to find out if they could lower the cost of eating; that if they found some interesting results with animals then they went to work with the

pediatricians or clinicians to find out if they duplicated that result with them; that before they would say anything whatever in terms of human beings, they would hitch up with clinicians and run the experiment on human beings before even attempting to insinuate that the rat experiments applied to human beings; that they still don't know whether butterfat is needed in human beings; that butterfat is developed by nature for the feeding of the young but it is specific for each kind of young; that in butterfat there are certain constituents not found in vegetable oils (T. 1659).

That on the whole question of fatty acid balance, the point should be made that there is a distinct difference between human butter and cow's butter (T. 1660), the former having very little butyric acid and being chemically very much different from cow's butterfat; that one might say the best thing to do would be to duplicate human butterfat in the feeding of infants but the chemistry of the butterfat changes from week to week and you would have to keep changing it chemically; that ass's milk butterfat is more nearly like human butterfat than cow's butterfat is; that even the very young infant has the capacity to take a fatty acid molecule and change it into the one it wants, so as far as they know yet it is not essential that certain fatty acids be present in definite amounts even in the young infants' dietary (T. 1661).

That Hart hasn't proven that there are certain fatty acids in butterfat that are essential, even to the nutrition of the rat; that he thinks nobody has proven that there is a fatty acid other than possibly linoleic acid which is essential in human nutrition; that if Hart should take those other fats and continue to feed them the animals

would still survive and that is the true test; that the fact that people grew a little bit better was no indication that they should, and that the presence of a factor demonstrated on a rat had nothing to do with human beings until they proved it on human beings; that there was a difference in the fat of vegetable oil and animal fat and butterfat (T. 163).

That the only fatty acid that had been proven to be of any significance nutritionally in human beings was linoleic acid and it happened that there was more linoleic acid in Milnot than in evaporated milk; that any new evidence that had just come out of laboratories and had not been tested on human beings to show that it was of significance to them, had no bearing on a question like that; that when that food was used by human beings in combination with other foods, there was no difference between them on the basis of any scientific evidence that they had; that that conclusion was based on all the evidence available today, including Hart's work; that there was no evidence to indicate that the vegetable oils were inferior in nutritional value to butterfat (T. 1664)—no evidence one way or the other; that there was evidence on both sides and the witness stated that the one was as good as the other, and one man could not draw one conclusion and another man another conclusion (T. 1665).

Re-Direct Examination.

The witness identified Defendants' Exhibit 169 (T. 1666) as the paper that was published in the journal "Food Research," entitled "Comparison of Nutritive Value of Refined Coconut Oil and Butterfat," by Robert S. Harris and L. Malcolm Mosher, from the Biological Research

Laboratories, Massachusetts Institute of Technology. The study was undertaken to determine whether there was a difference in the general nutritive value of butterfat and coconut oil; experimental diets using the two fats were fed to 120 day old rats the effects of the two diets on the animals as to fat increase and food consumption were observed, and the body tissues of the rats were studied histologically. The animals on the butterfat diet consumed a slightly larger amount but increased in weight much less rapidly than the animals on the coconut oil diet; the animals on both diets developed a slight fatty infiltration but it was equally intense in both groups. The results indicated that butterfats and coconut oils, even when fed at rather high levels, were equally harmless.

ROBERT WORTHINGTON DAWLEY.

(T. 1669-1686.)

Direct Examination.

Robert Worthington Dawley of Madison, Wisconsin, stated that his business was producing and trying to improve the standard rat used in tests; that prior to engaging in that business he taught and did research work at the University of Wisconsin in chemistry taking a Master of Science degree, and going quite a way towards a Ph. D.; also having taught at the University of the South in Tennessee; that he established his business at Madison in 1924 (T. 1669).

That up until two years ago they produced a very good ordinary strain of rat, but since then they had vastly improved it by eliminating parasites and infectious diseases, the change starting in May, 1940, but none being

available for some time; that the new rats were more vigorous and more uniform in their response to experimental conditions, and in a test would give much better results (T. 1670); that he wished the experiments reported in this testimony could be done again because rats should be very closely graded and should be exactly the same age; that he had examined the report of Dr. Hughes' experiment, Exhibit L, and the variations of the weight of the rats used there were not great, but to get the best test they should have been considerably less.

That he sold the rats to Dr. Hughes but if he had been advised of the importance of the work (T. 1671) they could have given him a much better selection; that the rats used by Dr. Hughes were from the old strain. That in his opinion the death of certain of the rats in Dr. Hughes' experiment could not have been caused from malnutrition because they grew very nicely and then something happened (T. 1672); that if the ration were completely inadequate, certain of the rats could not have made good growth, but the records showed that they did.

That if rats did not grow uniformly, you could be pretty sure it was due to disease or parasite infestation or some accident; that rats were susceptible to temperature and chill (T. 1673) and if 36 rats were shipped in one crate, some would get respiratory infections and others might not; that when the rats were placed in cages, some of which were higher than others, the temperature would be different because of the gradient in the room and that would affect the result of an experiment.

That the only butterfat given to the rats which he raised was contained in the dried skim milk which was given them, and that for years and years they had raised

rats on a ration containing dried skim milk and no other butterfat; that for a short time they tried whole milk but found no great improvement and it was not worth it (T. 1674); that they turned out from 10,000 to 15,000 rats a month and they were used all over the United States.

That in producing the new strain, using Caesarean operations, and raising the little rats by hand, they found that whole milk alone was not adequate and they had to add the various things that cow's milk was short on, adding citric acid in the form of lemon juice, eggs, and Dextri-Maltose (T. 1675); that the rats did not live long on whole milk alone.

Cross Examination.

The witness testified on cross examination that if a rat was not fed anything it would probably die in two or three days, and it would be a very bad animal on the second day; that of the old strain of rats, if a group of 100 were divided into two groups, one group might be more subject to dying as a result of parasites than the other group, because a heavily infected rat in one group would tend to infect the others (T. 1676).

That in Dr. Hughes's experiment, the fact that some rats died and the others survived and did well, proved that the ration could not have been toxic or inadequate, and the number used was not large enough to give a statistical average; that if you had a border line nutrition, none of the rats would grow well (T. 1677); that he sold rats to Professor Hart of Madison (T. 1678), and furnished 10,000 or 12,000 a year to the Foundation; that everyone had been getting the new strain of rats since September, 1941 (T. 1679).

That if rats were in poor condition the food they consumed became of more importance and they needed higher vitamin rations; that the fact that the rats on the milk diet in Dr. Hughes's experiment survived indicated that milk was a good food and the fact that some on the other ration grew well indicated that was a good food, because they could not grow well on a bad ration; that if the materials needed were not present in the ration you could not make rat meat out of it, and the fact that any grew well indicated that the growing capacities were in the ration (T. 1680); that from the other rats in the same group in which some died, he could be pretty sure that the deaths were not due to the food (T. 1681); that the variation in weight in rats 21 days old used to be over 100% but on the new strain it had been reduced to 25 or 30 percent; that at seventeen days the new strain weighed about 35 grams, and the old one about 26 grams. (T. 1682).

Re-Cross Examination

On recross examination the witness testified that the main infestation in the old strains of rats was respiratory disease like colds; that it seemed probable that Professor Hart's experiment of November, 1941, used the new strain (T. 1684).

Re-Direct Examination

The witness testified on redirect examination that they did not feed any cod liver oil to the rats they raised (T. 1685) because they were used in testing vitamins A and D and they had to guard against any surplus, and that the vitamin D requirement of a rat was lower than most animals, he being a nocturnal animal (T. 1686).

HOWARD J. CANNON.

(T. 1709-1757.)

Direct Examination.

Howard J. Cannon testified that he lived in Chicago, and by profession was a biologist, and director of a consulting laboratory operating under the name of Laboratory of Vitamin Technology; that he was a graduate of Western Reserve University in Cleveland, Ohio, and did postgraduate work in biological chemistry at Northwestern University Medical School; that at the completion of his academic training he joined the technical staff of the Abbott Laboratories located in North Chicago, Illinois, which company manufactures fine medicinal chemicals; that he joined the organization in 1926 and remained with them until 1932, and in the spring of 1932 organized the Laboratory of Vitamin Technology.

That his work at the Abbott Laboratories and in his present position had been limited almost exclusively to the field of vitamin research and vitamin assays; that he had devoted a great deal of time as far as research is concerned to the study of the vitamin content of fish liver oils, and had tested or examined the liver oils derived from practically every species of fish known to mankind; that he had discovered that halibut liver oil was a very rich source of vitamin A; that his principal activities in his capacity as director of the Laboratory of Vitamin Technology consisted in conducting vitamin assays of commercial products which include foods and pharmaceuticals; that his laboratory is one of the best known institutions of its kind and has won the recognition of the American Medical Association, as well as the food and drug administration (T. 363-364).

The witness testified that he had made an assay of Milnot and an assay of Carnation milk, both products being purchased on the open market; for the purpose of determining the vitamin content of both products; that both assays were made at the same time in April, 1942, and in the same manner, by recognized and approved methods (T. 1710).

Defendants' Exhibits 171 and 172, being the reports of those two assays, were offered in evidence and received subject to the objection of plaintiff that they were misleading and did not show a proper basis for comparison, the witness having stated in an answer to questions by plaintiff's counsel; that they did not feel it necessary to know the concentration of the two products, since they were called on to test the market samples in their original forms.

Defendants' Exhibit 171 (T. 1711), entitled "The Vitamin Content of Milnot," reported the respective amounts of Vitamin B1, riboflavin, nicotinic acid and pantothenic acid per fluid ounce of Milnot, together with the methods of assay used. The report stated that there were 6.0 International units of vitamin B1 per fluid ounce in the sample of Milnot, 112.2 micrograms of riboflavin per fluid ounce, 69.3 micrograms of nicotinic acid per fluid ounce, and 207.6 micrograms of pantothenic acid per fluid ounce.

Defendants' Exhibit 172 (T. 1713) entitled "The Vitamin Content of Carnation Evaporated Milk," reported the respective amounts of vitamin B1, riboflavin, nicotinic acid and pantothenic acid per fluid ounce of Carnation Evaporated milk, together with the methods of assay used. The report stated that there were 5.7 International units of vitamin B1 per fluid ounce of Carnation Evapo-

rated milk, 95.7 micrograms of riboflavin per fluid ounce, 69.3 micrograms of nicotinic acid per fluid ounce, and 248.1 micrograms of pantothenic acid per fluid ounce.

The witness stated that the amount of vitamin K present in evaporated milk was immeasurable by the methods of assay available for testing that factor, and they therefore had to assume that the product was either devoid of vitamin K or contained negligible amounts; that evaporated milk contained an appreciable amount of vitamin C but it could not be regarded as an important source of that factor.

The witness stated that they had recently performed feeding experiments with rats, feeding Milnot and Caroleene, having started the experiments early in March, 1942 (T. 1714), immediately following the taking of testimony at Madison; that it was decided they would conduct a feeding test on a normal diet containing whole milk and on a similar diet containing skim milk, so as to compare the relative nutritive values of skim milk and whole milk powder; that the other elements used in each diet constituted a normal diet for a rat.

That the rats were purchased from Sprague-Dawley, Inc., of Madison, Wisconsin, purchases of rats from that source amounting to 15,000 to 20,000 rats a year (T. 1715); that they made reports of those experiments at the end of four weeks.

The witness identified Defendants' Exhibit 173 as a laboratory report covering the experiment to determine the nutritive value of adequate rations containing whole milk and skim milk and he identified Defendants' Exhibit 174 as a laboratory report conducted in his laboratory to

determine the nutritive value of Milnot and Carnation Evaporated Milk.

Defendants' Exhibit 173 (T. 1717), entitled "The Nutritive Value of Colony Rations Containing Whole Milk and Skim Milk," reported that albino rats, representative of five litters, were assembled into four groups so that the weight of each group was approximately the same; that the rats were 26 days of age when the experiment was begun, and for 28 days thereafter, each group received water and a diet containing meat scraps, salt, bonemeal, yeast, alfalfa leaf meal and codliver oil, in addition to which Ration No. I contained whole milk powder and Ration No. II contained skim milk powder in place of the whole milk. One male group and one female group were each fed Ration No. I exclusively, and one male group and one female group were each fed Ration No. II exclusively; that records were kept of the growth of the rats, as well as food consumption, the rats being weighed twice weekly and observations made to determine the presence or absence of deficiency disease. The report showed the average gain of the male rats on the whole milk ration was 141.5 grams during the 28-day period; that the average gain of the female rats on the whole milk ration was 102.5 grams per rat; that the average gain of the male rats on the skim milk ration was 142.2 grams per rat, and the average gain of the female rats on the skim milk ration was 96.9 grams per rat.

The summary of the growth and food consumption records of that experiment is shown as follows, Group V being male rats receiving the whole milk ration, Group VI being female rats receiving the whole milk ration.

Group VII being male rats receiving the skim milk ration, and Group VIII being female rats receiving the skim milk ration:

"TABLE VI.

Summary of growth and food consumption records.

Group No.	Total Weight Gain per Rat (Gms.)	Total Food Intake per Rat (Gms.)	Weight Gain Per 100 Gm. Food Intake (Gms.)
V	141.2	436	32.45
VI	102.5	371	27.63
VII	142.2	420	33.86
VIII	96.9	391	24.78"

The conclusion of the feeding experiment reported in Exhibit 173 was that the nutritive efficiency of both rations was found to be approximately the same and it could therefore be said that the nutritive efficiency of the whole milk powder in Ration No. I, and the skim milk powder in Ration No. II, was essentially the same, and that the physical condition of the rats in all the groups was excellent and there was no evidence of deficiency disease (T. 1721).

Defendants' Exhibit 174 (T. 1721), entitled "The Nutritive Value of Milnot and Carnation Evaporated Milk," is the report of an experiment conducted to compare the nutritive value of Milnot and Carnation Evaporated Milk. The animals used were albino rats, representative of five litters, the rats being assembled into four groups, so that the weight of each group was approximately the same. The rats were 26 days of age when the experiment began and for 28 days thereafter each group received water, and, in addition, Group I, male rats, received an exclusive diet

of Milnot. Group II, female rats, likewise received an exclusive diet of Milnot. Group III, male rats, received a diet of Carnation Evaporated Milk; and Group IV, female rats, also received an exclusive diet of Carnation Evaporated Milk. Each rat in the four groups received additional mineral supplements daily, of iron, manganese and copper.

During the 28 day test period, records were kept of growth and food consumption, the rats being weighed twice weekly and observation made to determine the presence or absence of deficiency disease. The experiment showed that Group I, male rats, receiving Milnot, gained an average of 83.8 grams per rat during the 28 day test period; that Group II, female rats, receiving Milnot, showed an average gain per rat of 65.7 grams; that Group III, male rats, receiving Carnation Evaporated Milk, showed an average gain per rat of 77.3 grams, and Group IV, female rats, receiving Carnation Evaporated Milk, showed an average gain per rat of 67.3 grams.

The summary of growth and food consumption records is as follows:

TABLE III.

Summary of growth and food consumption records.

Group No.	Total Weight Gain per Rat (Gms.)	Total Food Intake per Rat (Gms.)	Weight Gain Per 100 Gm. Food Intake (Gms.)
I	83.8	776	10.80
II	65.7	677	9.70
III	77.3	714	10.82
IV	67.3	690	9.75

The conclusion of the experiment was that the nutritive efficiency of both products was found to be equal. It was further found that the physical condition of the rats in all groups was satisfactory and there was no evidence of deficiency disease during the test period (T. 1725).

The witness stated that he conducted the experiments for an additional 28 days, or for an elapsed period of 56 days for the entire test, those tests being reported in Defendants' Exhibit 175 and Defendants' Exhibit 176 (T. 1725).

Defendants' Exhibits 175 and 176 were offered in evidence, plaintiff's counsel reserving his objections on both of them.

Defendants' Exhibit 175 (T. 1726) is a report of the continuation of the previous experiment reported in Exhibit 173. The report showed that Group V, the male rats receiving the whole milk ration, gained an average of 96.7 grams per rat during the second 28 day test period; that the female rats receiving the same ration showed an average gain per rat of 36.6 grams; that the male rats receiving the skim milk ration showed an average gain per rat of 89.7 grams and that the female rats receiving that ration showed an average gain per rat of 46.8 grams. At the end of the test period, it was found that the physical condition of all of the rats except two, in the group of female rats receiving the whole milk ration, was satisfactory. The conclusion of the experiment was that on the basis of the combined data obtained in it and the previous experiment, the nutritive efficiency of both rations was found to be approximately the same, and therefore it could be said that the nutritive value of the whole

milk powder in Ration I and the skim milk powder in Ration II was essentially the same (T. 1729).

Defendants' Exhibit 176 (T. 1729), entitled "The Nutritive Value of Milnot and Carnation Evaporated Milk," is a report of the 28 day continuation of the experiment reported in Defendants' Exhibit 174, the duration of the two experiments being 56 days. The experiment showed that the rats in Group I, male rats receiving Milnot, showed an average gain per rat of 42.5 grams during the second test period; that Group II, female rats receiving Milnot, showed an average gain per rat of 35.3 grams; that Group III, male rats receiving Carnation Evaporated Milk, showed an average gain per rat of 43 grams; and that Group IV, female rats receiving Carnation Evaporated Milk, showed an average gain per rat of 35.5 grams; the physical condition of one rat in Group III was poor during the last 28 days of the test, the animal losing weight because of gas in the digestive tract, and that rat was excluded from the data. The experiment concluded that on the basis of the data obtained, the nutritive value of both products was found to be equal (T. 1732).

In discussing Exhibit 174, the witness explained the experimental methods used, stating that the rats were assembled into four groups, the assembly being made according to age, weight, litter mate distribution and possibly one or two other factors (T. 1733). The witness stated that in comparing the data obtained in the experiment, he could detect little or no significant difference in the weight gains of the rats receiving Milnot and those receiving Carnation, although from a strict point of view, the males in the Milnot group did a little better than the males in the Carnation group, while the females

in the Carnation group did a little better than the females in the Milnot group, but the difference was so small that it had no significance whatever (T. 1734).

That the data showing the weight gain per 100 grams food intake was extremely important because it indicated the true nutritive value of the two products; that the relationship between food intake and growth could be expressed as the nutritive ratio and that was a very important criterion in judging the actual food value of a product; that the experiments indicated that the nutritive ratio of the two products was approximately the same; that the physical condition of all the rats in the four groups was satisfactory, they failed to observe any evidence of deficiency disease in any form, and their conclusion was that the nutritive efficiency of both products was about the same; that the test on the control rations was conducted along similar lines (T. 1736).

That the difference in the gain of the rats fed the colony rations, which were dry rations known to be adequate for the nutrition of rats, over the gains of the rats fed Milnot and Carnation were decidedly significant; that both of the colony rations were substantially better than Milnot and Carnation (T. 1737).

In discussing the experiment comparing Milnot and Carnation, the witness stated that there was no significance, from a scientific point of view, in the slight difference in weights of the groups of rats (T. 1738); that they could state justifiably that in the Milnot and Carnation experiment, after 56 days, they found the nutritive value of both products to be essentially the same from every standpoint of measuring nutritive value; that the colony rations induced a normal rate of growth in the

rats, while the milk products caused a subnormal but good rate of growth in both cases. Another worthy conclusion was that the presence of skim milk in the colony ration caused a response approximately equal to that obtained with the ration containing whole milk, and it seemed that the presence of butterfat in colony rations was not necessary for normal growth and development of rats (T. 1739).—

That a test which did not provide data on food consumption was of little or doubtful value because you must know the ratio of the amount of food consumed to the increase in weight or growth of the experimental animal.

That none of the rats died in any of the groups during the 56 day period; that if they were conducting an experiment to determine the relative value of foods and several of the rats died, their laboratory, and most qualified laboratories (T. 1740), would perform an autopsy to establish the cause of death, it being inexcusable to attribute death to unknown causes; that it is not only good practice but is necessary to determine the cause of death because otherwise you might overlook data of great significance in interpreting the results of the tests; that the rats used in his test heretofore reported were of the pure strains.

That rats could be divided into groups for experimental purposes by taking the three largest and distributing them into three groups and then taking the smallest and distributing them, and so on back and forth (T. 1741); that the logical practice in all qualified laboratories was to take litter mate distribution into account, because certain litters are faster growing than

others; that in addition, each group of animals must be housed under identical conditions (T. 1742), one having to take into consideration factors such as temperature, humidity, illumination, and circulation of air, because otherwise the groups of rats would be exposed to variations, having no bearing on the test; that, for instance, the exposed animals might catch cold while those not exposed to draft might remain free of colds; that, in addition, experiments should be conducted in air-conditioned laboratories where climatic conditions remain constant (T. 1743); that the results obtained in tests conducted at different periods would not be sufficiently accurate, because the same conditions should surround each experiment (T. 1744).

Cross Examination.

On cross examination the witness testified that normally a rat would be weaned on the 21st day, but that might vary from one laboratory to another (T. 1745); that it was approximately correct to say that one day in the rat's life was equal to one month in the human life (T. 1746); that in conducting experiments such as these, they never used very young rats because in taking weanling rats away from their mothers it was a very drastic change and they preferred to condition the animal for a day or two to determine whether it would be suitable for test purposes (T. 1748).

That the larger number of rats in an experiment the greater would be its accuracy and a minimum of 10 rats was desirable (T. 1751).

That in conducting their vitamin assays, they were not interested in the relative concentrations of Milnot and Carnation, because they wanted to find out the vitamin

content of the two products as purchased by the consumer; that he had never conducted experiments with the two products using rats 15 days of age and he did not think such experiments would show proper results; that he would hesitate to take a 15 day old rat away from its mother and start feeding it material to which it had never been accustomed at that age (T. 1754).

Re-Direct Examination.

On redirect examination the witness testified that the Milnot used in his experiments was the cottonseed oil product described in the stipulation; that if 15 day old rats were used in an experiment, he would be afraid of their capacity to digest and assimilate any kind of foreign foods (T. 1755).

BENJAMIN R. HARRIS.

(T. 1757-1765.)

Direct Examination.

Benjamin R. Harris testified that he was a chemist, living in Glencoe, Illinois, and maintained an office in Chicago; that he was a member of a partnership which operated as Epstein, Reynolds and Harris, Consulting Chemists and Engineers, and Vice President of a chemical manufacturing concern known as the Emulsol Corporation.

That he was graduated with a Bachelor of Science Degree in Chemistry at the College of the City of New York in 1917; Master of Science Degree in Chemistry at the University of Illinois in 1921, and did further graduate work at the University of Chicago in Chemistry; that he had some brief experience, prior to his service in the Army in 1917, with the United States Bureau of Fisheries.

as chemist and bacteriologist at Woods Hole, Massachusetts; that thereafter he was in the United States Chemical Warfare Service for somewhat over a year; and after that was for two years research associate at the Illinois Engineering Experiment Station at Urbana, Illinois, and was chemist for the Western Metal Products, Joliet, Illinois; that since 1922 he had been engaged in the independent practice of chemistry. That the Emulsol Corporation is primarily engaged in the manufacture of emulsifying agents for industries that produce edible oil and fat products; that he was engaged in the chemical study of foods and food products (T. 394-395). That in the practice of his profession he had acquainted himself with the chemical qualities of the various fats and oils, and had kept himself informed with literature on the subjects in which he had been interested (T. 397).

The witness testified that he had analyzed the product in question for the purpose of determining the linoleic acid content of the fat, its iodine number, its incipient melting point and its complete melting point, having purchased the Milnot on the open market; that the fat was isolated by the standard recognized method of the Association of Official Agricultural Chemist; that he found the iodine value to be 62.6 (T. 1757), and the thiocyanogen number, which is a measure of the content of fatty acids more highly unsaturated than oleic acid, being almost entirely concerned with linoleic acid, to be 60.5; that the calculation of these results showed a linoleic content of 3%.

That the incipient melting point, which was the temperature at which the fat commenced to melt, was 18 degrees C.; that the temperature at which the fat from Milnot was completely melted was 36.6 degrees C. (T. 1758).

That at the same time they analyzed the fat from Carnation Evaporated Milk, having purchased the milk on the open market; that the same methods of analysis were used and it was found that the fat isolated from Carnation Evaporated whole milk had the following characteristics: Hanus iodine value 33.0, thiocyanogen number 32.8, linoleic acid, 0.26%, incipient melting point 14.2 degrees C.; completely melted 27.2 degrees C.; that there was a little more than 10 times as much linoleic acid in Milnot as in Carnation Evaporated Milk.

The witness testified that he had checked the weights of Mr. Hart's rat experiment, as shown at page 183 of Exhibit M, found at page 1045 of the transcript, and had determined the weights of the various groups of rats used in the experiments (T. 1759), as well as their weights at the conclusion of the experiments, and at the end of three weeks; that he had computed the percentage of the rate of gain of the animals used in both experiments, both at the end of three weeks and at the end of six weeks (T. 1760); that he computed the percentage ratios of gain to original weight.

That his calculations on the weights at the end of the three weeks period showed that in the case of the coconut oil the male group gained 133% and the female group 115%; in the case of corn oil the male group gained 144% and the female group 128%; in the case of soybean oil the male group gained 173% and the female group 180%; in the case of butterfat the male group gained 176% and the female group 161%; and in the case of cottonseed oil the male group gained 200% and the female group 175 percent.

That at the end of six weeks of feeding, in the case of coconut oil the males gained 288% and the females

226%; in the case of corn oil the males gained 324% and the females 240%; in the case of soy bean oil the males gained 448% and the females 352%; in the case of butterfat the males gained 344% and the females 266%; in the case of cottonseed oil the males gained 375% and the females 312%; and at the end of six weeks the soybean oil showed the highest percentage of gain (T. 1761), and the next highest percentage of gain was the cottonseed oil, with butterfat next (T. 1762).

Cross Examination.

On cross examination the witness testified that the tests he made showed that the fats in the two products were different to the extent indicated by his figures; that Professor Hart's experiment did not show the iodine number of the fat he used, and the cottonseed oil was indicated to be liquid cottonseed oil, while the oil in Milnot would be the product of partial hydrogenation (T. 1763).

Re-Direct Examination.

On redirect examination the witness testified that there was nothing to show that the liquid oil used by Professor Hart was deodorized and that the impurities had been taken out; that he recalled that Professor Hart had no data on the character or quality of the oils; that before liquid cottonseed oil is hydrogenated and deodorized it has a very distasteful smell (T. 1764).

DR. ANTON J. CARLSON.

(T. 1765-1791.)

Direct Examination.

Dr. Anton J. Carlson of Chicago, who had testified previously and whose qualifications are set forth at page

102 of the abstract, stated in regard to the animal experiments that one of the reasons why he had not changed his opinion, after having heard or read the testimony of the State's experts, that the product was wholesome and nutritious for human beings and that there was no difference of opinion among competent authorities on that question, was because of the questionable scientific character of the rat experiments introduced by the State's witnesses. That he regretted exceedingly for the reputation of higher education and scientific research that the experiment of Professor Hughes in the record was ever allowed to be reported outside of the laboratory (T. 1766); that in his judgment it was not a scientific experiment and he did not know exactly what was wrong but there was something the matter with it and it should have been repeated.

That he had studied the testimony and published papers of Elvehjem and Hart and was first at a loss to account for some of the differences in weights, and he thought it might have been a matter of flavor; that the differences in the Madison experiments were not as great as the conclusions indicated, and as a matter of fact the record showed that when you calculate in a different way some of the rats did very well or better than the butterfat rats, even at the end of three weeks (T. 1767).

That he was familiar with the literature, and some Stockholm investigators had used vegetable fats as compared with butterfat, and had gotten no significant change in growth in three weeks; that since he had testified before, he had taken part in an experiment similar to that of Elvehjem and Hart, using a number of vegetable oils as compared to butterfat on rats, and using a larger number of rats than used in the Wisconsin experiments.

and had not gotten those results; that he was therefore strongly of the opinion that not a great deal of weight could be put on that experiment of Elvehjem and Hart, even though it had no direct bearing on the nutritive qualities of the product for man; that they had to go much farther to see what was wrong with it; that Dr. Dawley's testimony that they raised, apparently, a superior breed of rats on a diet containing no butterfat except that in skim milk was supported by the historic fact that good humans can sometimes be raised from birth on foods other than milk and that many races, even up to historic time, have no milk in the diet after they are weaned (T. 1768).

That the only real issue raised by the Wisconsin experiment was whether there was any form of fatty acid in milk that was a specific stimulus of growth in the early stage of infancy; that they do not conclude it entirely, but say it looks like it; that as far as the data at present goes that is nullified by human experience; that Hart and Elvehjem, of course, pointed out in their experiment that those rats which were behind had caught up at the end of six weeks; that we must be a little careful in putting minutiae into variations in growth as a measure of health (T. 1769); that giants up to eight feet tall can be produced by excessive stimulation of the pituitary gland but they are not superior humans; that the measure of brain or even physical efficiency is not made entirely by the perpendicular and a scientific experiment, even on rats, should have been carried to the point of end of growth, and before you draw any conclusions such as those hinted at in the Madison experiment, you must determine how much was fat and how much was growth in the rats, because adiposity is not growth; that

he would have made total fat analyses and that Dr. Elvehjem, in correspondence, admitted that point; that the experiment he had talked about and with which he was connected had not been completed (T. 1770); that it had gone six weeks but they intended to make a real experiment of it, controlling the fat and seeing what happened to total size and longevity; that after six weeks, the report to him was that there was no difference in the apparent rate of growth of the rats.

Cross Examination.

On cross examination the witness testified that Dr. Elvehjem was a good investigator but that he did not put Hart in the same category because he thought something had happened to Hart during the many years he was under the pressure of the organized dairy industries in Wisconsin, and that, consciously or subconsciously, his testimony showed that he had a phobia; that he did not know Dr. Gullickson and had had no experience in the matter of feeding calves on an artificial mixture but he did know that calves began to practice omnivorous eating rather early (T. 1771), long before being weaned; that he knew Hogan of Missouri and he was a good man, doing good work; that he respected his integrity and analyzed his opinions, as he did with everyone; that he respected the integrity of Professor Hart but he had been influenced by someone as indicated by his extreme position with reference to milk and milk fats in the human dietary; that anyone who says that milk is an essential food for man, that he can not live without it, has left the mooring of science and fact; that he knows the subtle influence of political and economic pressure in state institutions (T. 1772).

That he had recently made a talk before the Federated Women's Clubs in Fort Worth, taking the position that the legal fetters on the sale of oleomargarine should be removed (T. 1773); that 25 years ago he had argued against the filled milk law in Wisconsin, being familiar with the situation that led to that legislation; that there was possibly a little more excuse for passing such laws at that time, because then they were not able to make such good nutritious and highly concentrated natural vitamins as they are now, and were probably not in a position to purify and deodorize vegetable fats to the present extent, "but even then it was largely an economic pressure group question" (T. 1774).

That he had no reason to doubt Dr. Hughes's integrity, but his experiment was not carried on scientifically, and apparently a cold or some other catastrophe happened (T. 1775).

That there are different physical and chemical constituents in butterfat and vegetable oil fats, just as there are differences in white fish and rump steak, but both are good foods; that there are certain fatty acids in butterfat that are not found in vegetable oil fats; that the chemical analyses of various fats do not mean anything at present because the human body is able to adequately utilize a great variety of fats; that different animal fats and vegetable fats vary, but the capacity of animal and human digestion and nutrition is such that they are taken apart into individual fatty acids, some are burned, and others are recombined into the various fats of the body; that we even make fats from proteins and starch or sugar; that on the bases of direct feeding and nutrition, those differences have no meaning in the issues in this case

(T. 1776); that there are a great many ways in which we could have improved our human machine, but there is no question that through the period of evolution, the mammal arrived at the state when it produced milk (T. 1777); that the egg in the case of birds and reptiles served the same purpose.

That in the experiment he was engaged in, they started the rats at 21 days (T. 1778); that you did have greater difficulty starting rats at 15 days.

That no conclusion should be drawn from rat experiments except on sound, scientific experiments; that the human problem of good or optimum diet and the fitness of this or that for infant nutrition is a slow thing, and you have to weigh the general average of hundreds or thousands of youngsters, (T. 1780) under the varying conditions a human is exposed to, and that is cumulative evidence of the good pediatrician.

That he knew of no long feeding experiments on human infants with Milnot as the sole basis, but from the literature and from his knowledge he knew that prolonged or exclusive feeding with either whole milk or Milnot would lead to disaster because they have to be supplemented in the early development (T. 1781); that the primary effect would not be on the brain or nerve, because they are produced mostly from sources other than the lecithin or fat in milk, but would be in the production of anemia; that the brain and nerves continue to grow until the individual's full growth is attained (T. 1782); that in the human species the total number of nerve cells seems to have been laid down and reached before birth, but the myelin sheath goes on and grows

for awhile during the first year, although many nerves never put on myelin; that there is myelination in the fish, the snake and the bird (T. 1784), and there is no evidence that the human or any animal takes the precise lecithins of milk and builds them into these cerebral cells; that apparently we can build them from the other general sources of fatty acids, lecithin, phosphorus, etc., in our general foods.

That in Hart's experiment the condition of the hair would probably be insignificant, and there was nothing in the record regarding the muscle, and certain types of dietary deficiencies or infections produced hair trouble; that the length of the animal would be the most objective test and he would have taken an X-ray of the legs and measured them (T. 1784).

That no sane pediatrician would feed the product in question alone, or milk alone, because they are all supplemented, and in the case of the infant modified fresh milk, modified evaporated milk, and supplemented, particularly dextrose added, modified Milnot, any of the other formulas for baby's food, supplemented, would do very well; that he was not arguing against milk and milk products for infant feeding (T. 1785); that at present he did not know of any infant foods with hydrogenated cottonseed oil but that made no difference; that he knew the digestibility of vegetable fats and there was no difference.

Re-Direct Examination.

On redirect examination the witness testified that when a rat was taken off his mother's diet and started on any new diet, he might absolutely refuse to eat the first day; that they ate less and were disturbed, and that was

why he said the proper way to test it was to gradually condition the rat by feeding the mother during the last four or five days before weaning on the same ration that you were going to put the rat on; that taste and smell in the lower animals was far superior to that in man (T. 1786); that being borne out by Hart's experiments because they showed retardation during the first week. That the chart in Hart's experiment showed that there was a difference in the weights of the rats used in the different experiments; that, for instance, the soybean rat, if pushed up to the same base level with the others, did far better than the butterfat, and the cottonseed rat just about equaled the butterfat rat, that being borne out by the calculations testified to by Mr. Harris; that in his opinion, from the testimony in the case, there was no scientific basis for a conclusion by any competent scientist that Milnot, as a food for infants, would cause injury to the child if used in the ordinary manner as similar foods of that type (T. 1787).

Re-Cross Examination.

On recross examination the witness testified, on being asked whether he recommended that a mixture such as the product in question be substituted for whole milk in the diet of infants, that if it was a question of poverty and being able to buy three cans of Milnot as compared to two of evaporated whole milk, he would certainly recommend the Milnot; that he would recommend Milnot because it contained 10% more solids, together with whatever factor of safety there was in the uniform higher content of Vitamins A and D.

"If it comes to an extreme, there would be a factor of safety in Milnot, and I would do the same if I, for

example, had the choice between evaporated milk and Milnot, either one available, three cans a day for 100 days and nothing else, I will take my chance on Milnot and travel farther on it because of that small factor of difference of 10% in important nutrients; but under ordinary conditions of life, it wouldn't make any difference, much difference, which one the pediatricians advise (T. 1788) or the mother feeds, if I have made myself clear."

That digestibility and protein and energy value of a food is important; that its inorganic salts and its vitamins are also important and you had more of them in Milnot than in evaporated milk, and more constancy of Vitamins A and D; that the caloric value in both products was largely determined by the percentage of fat, which was practically identical; that the value of protein nutrition was not measured by caloric value of protein—that was far superior (T. 1789); that vitamins have no caloric value but milk sugar has; that caloric value referred to the bomb calorimeter and humans and animals do not burn food to that extent; that he did not know which had the higher caloric value but he guessed it was practically identical.

Re-Direct Examination.

On redirect examination the witness testified that if there was more milk sugar and more protein in Milnot, that would increase the caloric value and if there was more fat in evaporated milk that might give a higher value; that the value of the protein in skim milk and the significance of the inorganic salts and vitamins could not be measured by calories, but far outweighed the mere caloric factor (T. 1790); that if Milnot was made with the same percentage of other edible digestive fats such

as olive oil, coconut oil, peanut oil or butterfat oil, that would make no difference, assuming they were properly purified and emulsified (T. 1791).

WILLIAM HENRY SNYDER.

(T. 1791-1811.)

Direct Examination.

William Henry Snyder, living in Chicago, Illinois, stated that he was a lawyer (T. 1791) and at the present time did legal work for the Evaporated Milk Association, which he assumed was the same organization which contributed to the financing of the Wisconsin experiments; that the Evaporated Milk Association was comprised of a large group of manufacturers of evaporated milk including Dean's, Borden's, Pet, Carnation, Nestle and Page.

That the Irradiated Evaporated Milk Institute was a voluntary association composed of the manufacturers of irradiated evaporated milk, operating under a license granted by the Wisconsin Alumni Research Foundation, which foundation, he thought, contributed from time to time to the Wisconsin experiments.

The witness testified that he appeared for the Irradiated Evaporated Milk Institute at the hearings before the Food and Drug Administration on December 8, 1940; that to his knowledge the Institute had not contributed to the preparation of this case (T. 1793); that the witness had, from the first hearing in this case until the present, sat with and advised the attorney for the State of Kansas, and at his request had been in conference with Mr. Morris in Chicago and had assisted in the preparation of questions to be propounded to the witnesses; that the

witness was in the employ of the Irradiated Milk Association at the time.

That Dr. Hineman, who had been present at all the hearings, advising with Mr. Morris and assisting in giving technical aid in the examination of the witnesses, was Research Director and Director of Educational and Editorial Program of the Evaporated Milk Association, and was in the employ of the Irradiated Evaporated Milk Institute; that he thought Dr. Hineman, at the request of Mr. Mohler and Mr. Morris, supplied the cottonseed oil used in the Wisconsin experiments (T. 1794).

That during the last two and a half years the witness had rendered assistance from time to time to various state people at their request in connection with the enforcement of filled milk laws and he and Dr. Hineman appeared before the Committee of the Missouri Legislature in behalf of a bill to prohibit the sale of the product in question, and Dr. Hineman made a speech at the request of the Commissioner of Agriculture; that he thought the Evaporated Milk Association financed the trip of Dr. Hineman and the witness (T. 1795).

The witness testified that the interest of the Evaporated Milk Association in filled milk laws had been two-fold, first, because the manufacturers of evaporated milk, some twelve or fifteen of them, making evaporated milk in 1923 were injured when Congress outlawed the shipment of the product in interstate commerce (T. 1796), and they wanted to know whether or not the statutes were going to stand, and if so, they would continue to abide by them, and they were convinced that filled milk should not be sold unless it was equal to or superior to evaporated milk in every respect; that if it develops that scientific

knowledge reaches a point in the next few years where they know filled milk is equal to or superior to evaporated milk in every respect as a food for infants "then I can assure you, sir, that there will be a lot of competition for the Carolene Company, and when I speak of competition I speak of the product being sold as and for what it is and at a price consistent with the cost of making."

That the witness knew there were such things as proprietary infant foods fed under the prescription of a physician (T. 1797) and sold under the exception of the Federal Law; that they are all dried save one and it is packed in an oversized can with a painted label and is sold only under a physician's prescription; that Borden puts out a product or two and perhaps Nestle does; that a mother could buy such a product without a physician's advice and there is no law requiring them to have a prescription, but the witness doubted whether or not mothers did that (T. 1798); that the witness had made several trips to Washington and had discussed the Kansas filled milk case with the people in Washington from time to time; that he did not recall that Dr. Hineman had been there discussing it.

Cross Examination.

On cross examination the witness testified that the present suit in Kansas was filed in December, 1940, and Mr. Morris had requested a conference with the witness and Dr. Hineman in the early part of 1940 (T. 1799).

The witness identified a copy of a letter from Mr. Morris to Mr. Snyder, dated September 26, 1940, in which letter Mr. Morris stated that he and Mr. Noe would be in Chicago and would make a definite appointment for a conference. The letter was read in evidence.

Plaintiff's counsel also read in evidence a letter from Mr. Morris to Evaporated Milk Association, dated September 12, 1940, asking for a conference with Mr. Snyder or Mr. Hineman with regard to the filing of another suit in Kansas (T. 1800).

Plaintiff's counsel read in evidence a letter of September 19, 1940, from Mr. Snyder to Mr. Morris, agreeing to a conference for the discussion of the filled milk problem (T. 1801).

The witness stated that Mr. Morris initiated the request for a conference and that Mr. Morris had asked for the assistance of the witness and Mr. Hineman in connection with the proposed litigation; that the witness had promised to and had kept Mr. Morris advised of the status of filled milk litigation in other states; that the Evaporated Milk Association did not employ Mr. Morris in this law suit.

The witness stated that the manufacture and sale of filled milk was a profitable enterprise (T. 1802), and that manufacturers, by obeying the Federal and State Statutes, necessarily lost otherwise profitable markets; that their people also refrained from manufacturing filled milk because of their conviction that the product could be sold as and for evaporated milk and could not adequately replace whole milk in the diet of infants and children (T. 1803); that to his knowledge there was no plant other than the Litchfield Creamery Company that was manufacturing the product, although two other companies made it up until two or three months previously (T. 1804); that if tin was available the evaporated milk manufacturers, particularly the smaller ones, would immediately begin to manufacture filled milk if the Federal and State laws

were held inapplicable; that the competition was not between economic interests but between the two products.

Re-Direct Examination.

The witness testified that Frank E. Rice was executive secretary of the Evaporated Milk Association and managing agent of the Evaporated Milk Industry (T. 1808).

Defendant's Exhibit 177 (T. 1810), a letter of July 7, 1939, from Frank E. Rice, with the heading "Organization of the Evaporated Milk Industry under the Agricultural Adjustment Administration," and stating that all mail should be directed in care of the Evaporated Milk Association in Chicago, was offered in evidence. It stated that the item relative to legislative expenditures was unusually high in June, because over a thousand dollars was spent in the employment of expert witnesses and to pay expenses of two members of the office staff and expenses of some farmers who attended the trial of the Missouri filled milk case; that the industry was contributing to some research on filled milk being carried on at Northwestern University "which is designed to uncover some facts regarding the nutritional value of filled milk as compared with whole milk," and that a payment of \$750 on that research was due during the month of June; that they had to pay counsel in Oklahoma a fee of a thousand dollars to fight a bill which would have made it difficult to ship evaporated milk and other dairy products into the state (T. 1810).

PLAINTIFF'S SURREBUTTAL EVIDENCE.**DR. J. S. HUGHES.****(T. 1844-1861.)**

Dr. J. S. Hughes, who had testified previously, identified Plaintiff's Exhibit LL as a table showing the relative or comparative food values of Evaporated Milk and Milnot, including references as to where the information was secured; that he had collaborated in the preparation of the table (T. 1844) and had checked the accuracy of the material presented; that quite frequently he had used the transcript of evidence as the basis for the table and in a number of cases the table showed where the information was secured; that under the heading "Proximate Principles of Composition" was found the chemical analyses of the two products, including the energy calculation (T. 1845); that the large double sheet was taken from the transcript and showed the vitamins (T. 1846); that there were some values in the exhibit which were not introduced in the record but the reference was given so that they could be checked (T. 1847).

Plaintiff's Exhibit LL (T. 1848), which was offered in evidence, is entitled, "Table of Comparative Food Values of Evaporated Milk and Milnot," and contains data with reference to the composition of the two products. The data with regard to the composition, with the exception of the vitamin table, is as follows:

Table of Comparative Food Values of Evaporated Milk and Milnot.

I. Proximate Principles of Composition

	Evaporated Milk	Milnot
Fat	7.9%	6.0%
Protein	6.8%	7.75%
Carbohydrate	9.7%	10.75%
Mineral Ash	1.5%	1.65%
Total Solids	25.9%	26.15%

II. Energy Value

	Evaporated Milk	Milnot
Total Calories per 14½ oz. can	564	526

Note: Calculated according to accepted values: 4 calories per gram for protein and carbohydrate respectively and 9 calories per gram for fat.

III. Fat

A. True fat (glycerides of fatty acids) Fatty acid content

Name of Acid	No. of Carbons	Percent in Butterfat	Percent in Cottonseed Oil
Butyric	4	3.2	—
Caproic	6	1.4	—
Caprylic	8	1.6	—
Capric	10	1.8	—
Lauric	12	6.9	—
Myristic	14	22.6	0.3
Palmitic	16	19.2	19.1
Stearic	18	11.4	1.9
Arachidic	20	1.3	0.6
Behenic	22	Present	—
Lignoceric	24	Present	—
Cerotic	26	Present	—

One Double Bond

Decenoic	10	0.3	—
Dedecenoic	12	0.4	—
Tridecenoic	14	1.6	—
Hexadecenoic	16	4.0	—
Oleic	18	27.4	33.1

Two Double Bonds

Linoleic	18	5.6	39.3
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Four Double Bonds

Arachidonic

20

Present

Note: The cottonseed oil used in Milnot is partially hydrogenated; thus the linoleic acid is in large part converted to oleic acid. (above table from Tr. p. 992)

B. Phospholipins (fat-like substances associated with the true fat)

Evaporated Milk

Contains all phospholipins naturally present in milk

Milnot

Phospholipins are removed in large part by separation of cream. Tr. pp. 1004, 1226

C. Sterols (fat-like substances associated with the true fat)

Evaporated Milk

Contains all sterols naturally present in milk

Milnot

Sterols are removed in large part by separation of cream. Tr. pp. 1005, 1223

IV. Protein

The composition and biological value of the protein in evaporated milk and Milnot may be assumed to be identical.

V. Carbohydrate

The carbohydrate in both evaporated milk and Milnot is the same, i. e., lactose.

VI. Minerals

The assortment of minerals and proportion, one to the other, in evaporated milk and Milnot may be assumed to be the same.

The witness stated that he was in Chicago and heard Mr. Cannon testify about the experiments he had made; that Hart and Cannon did not agree in their results because Hart started his rats at 15 days and said he did not expect results if older rats were used; that chemical analyses showed that certain of the fatty acids in the rats' nervous system doubled between the tenth and fifteenth days and it would be only reasonable to expect nutritional differences between butterfat and other fats to show up at that time (T. 1849); that the experiments should be run at the time when the animal was receiving the particular product under natural conditions.

That the witness heard Dr. Carlson state that the witness' experiment was not a scientific one, but the facts of the case were that it was run in the most ap-

proved scientific manner and that you could not get a clearer cut experiment showing the difference than that run by the witness and in which all of the rats on milk lived and made reasonable growth while five on Milner died and none of them grew as well as the poorest on the milk diet (T. 1850); that the application of the results was very simple—that the two products were not equal in nutritive value; that of the group who testified, including Benjamin Harris, Dr. Carlson, Dr. Robert S. Harris and Mr. Cannon, only Dr. Harris could testify as an expert in biochemistry and nutrition, and Dr. Harris' work showed that he had found butterfat in certain conditions to be superior to the vegetable oils, and he agreed with the other experts in the field of biochemistry and nutrition that there was probably something in butter that was superior; that there was nothing in all that testimony that in any way would change his opinion in regard to the fact that there was, or might be, a difference in the nutritive value of vegetable oils and butterfat (T. 1851).

The witness testified that Professor Hart's experiment was set up properly to test the relative nutritive value of butterfat and vegetable oils and that if any other substances had been introduced into the diet, such as fruit juices, that might easily have prevented the showing of the difference.

Cross Examination.

Defendants' Exhibits 184 and 185 (T. 1857), being "The Fatty Acid Content of Butterfat and Cottonseed Oil" and "Report on Filled Milk Experiment," which were offered before the Federal Trade Commission in Chicago, were offered in evidence.

Defendants' Exhibit 185, the report on Dr. Hughes's filled milk experiment, contained the following under the heading "Discussion":

"Discussion

"None of the rats in this experiment did as well as the rats receiving similar feeds as reported by Professor Hart. The relatively lower average daily gains and high death rate of the rats in this experiment, no doubt, was due to the condition of the rats at the time the young rats were placed on the experiment.

"Professor Hart has found that rats must be started at an early age, preferably not older than 21 days, if the difference in the nutritive value of butter and other fats is to be demonstrated.

"The young rats used in this experiment were taken from their mothers at 20 days of age and shipped by express from Madison, Wisconsin, to Manhattan, Kansas. Food and water are provided for young rats during shipment by placing a few potatoes in the shipping crate. This works well for rats after they are old enough to eat freely. These rats were so young that they ate very little of the potatoes so they were without food and water during the time they were enroute. These rats may have been subjected to unfavorable temperature conditions. They appeared all right when they arrived and were placed on the feed. Had these rats been moved directly from their mother's cages to the experimental cages, as is the case with Professor Hart's rats, their performance would, no doubt, have been as good as he reports for his rats. Faulty nutrition becomes more apparent if the vitality of the experimental animals is lowered by some adverse conditions.

"The fact that all the rats receiving the evaporated milk ration did fairly well, while five of the rats on each of the filled milk rations died during the twenty-eight days test, serves to emphasize the superior quality of evaporated milk as compared to filled milk."

Re-Direct Examination.

On redirect examination the witness testified that the material under the heading "Discussion" was left out of Exhibit L in the instant case; that there were no other changes in the two exhibits (T. 1858).

The witness testified that Exhibit L was a certified copy of his report, and was signed before a Notary Public and because he supposed he had to have a certified copy of his original data, he did not include a discussion for that copy (T. 1859).

That when he testified at Madison in the present case, he testified as to the fact the young rats had consumed very little of the potato, which was part of their food, when he received them, and that really was the thing that put the emphasis on the experiment, for frequently, in testing for a nutrient, they depleted the animal in order to make the deficiency stand out; that the rats were not seriously harmed because all of them on milk did fairly well, while the vegetable oil was unable to produce normal growth (T. 1860).

That Exhibit 134 gave the fatty acid content of butter and cottonseed oil, and did not include one acid, arachidonic, which was found in Exhibit L, since it was added on Exhibit L from another source.

V.

As to Fraud in Sale of Product.

A.

Advertising—Sales by Retailers.**DEFENDANTS' EVIDENCE.****MELVIN HAUSER.**

(T. 142-150.)

Re-Direct Examination.

Melvin Hauser, Treasurer and Assistant Secretary of the Litchfield Creamery Company, stated on redirect examination, in regard to the advertising used in connection with the sale of Milnot and Carolene in the State of Kansas, that Defendants' Exhibits 11, 12, 13, 14, and 15 were the forms of advertising furnished by the company for use in the state of Kansas and that he knew of no other advertising used there (T. 146). These exhibits were offered in evidence.

Defendants' Exhibit 11 (T. 147) is a booklet entitled "60 New Recipes for Milnot—It Whips—Not Evaporated Milk or Cream." The recipe book contains a foreword by Rose McDowell Kemp, Milnot's Food Designer. On the first page it is stated that Milnot should be asked for by name, and that it is made by a patented process in which nutritious, wholesome skim milk solids are combined with pure refined vegetable oil; that the proteins, minerals and carbohydrates that give whole milk so much of its food value are concentrated almost two and a half times, resulting in more vitamins B and G, and that with the addition of vitamins A and D, Milnot is made richer in those four vitamins than a canned milk. The book contains

recipes for the use of Milnot in soups with meat, cheese and fish, with vegetables, in sauces and salad dressings, in breads, cakes, cookies, pies, desserts, beverages and candy.

Defendants' Exhibit 12 (T. 147) is a cardboard mat for use in advertising, stating that Milnot, which costs less than a canned milk, is ideal for cooking, coffee, frozen desserts, and is extra rich in vitamins A, B, D and G, and has no "canned" taste.

Defendants' Exhibit 13 (T. 147) is a notice put in the cases of the product in question at the factory. It is on a yellow sheet of paper and is worded as follows:

"Notice

"Milnot and Carolene are unique food products and should be sold only under their trade names. We are proud of these products and believe they have a definite place in a well balanced diet.

"It is improper to advertise, represent, display or sell either of these products as milk, or evaporated milk or cream.

"In advertising the product the slogan 'It Whips' is approved by the manufacturer. Any variation of this slogan is not approved.

"The label on the can clearly discloses the nature and ingredients of the product and any advertising or representation should be confined to the statement of the label.

Carolene Products Company,
Litchfield, Illinois"

Defendants' Exhibit 14 (T. 147) is a streamer on which is pictured a can of Carolene and on which are found the

words "Makes Good Coffee Better—Also Ideal for Cooking and Baking."

Defendants' Exhibit 15 (T. 147) is a streamer on which is pictured a can of Milnot, and which contains the following: "No Canned Milk Taste—Also Ideal for Cooking and Baking."

GLADYS BUCHHOLZ

(T. 481-486.)

Direct Examination.

Mrs. Gladys Buchholz, employed by Emery, Bird, Thayer's in Kansas City, Missouri, stated that in the past she had demonstrated Carolene and Milnot, working in food shows and grocery stores; and showing that the product could be whipped and served on cake (T. 481); that the food shows were conducted by the Associated Grocers and brokerage houses in Kansas City and St. Joseph; that she would display the product, explain its use to the people who made inquiry and show them how it was used how it could be whipped and served on desserts and used in cakes, candies, puddings, dessert baking and in coffee; that there was interest shown in it by the consuming public because most everyone had used it in cooking and in their coffee and that she had used it in her own home (T. 482); that at the food shows she had recipe books which the company put out and they were distributed.

That in her use of the product in her own home it had never resulted in injury to anyone and in her demonstrations of it to the public she had never heard any complaint.

Cross Examination.

On cross examination the witness stated that she used the product only for purposes for which milk would be used (T. 483); that she did the demonstration work at the request of Valley Brokerage Company which had charge of the sale of Milnot and Carolene in that territory and she had demonstrated both the coconut oil and cottonseed oil product; that she had demonstrated in both Missouri and Kansas, and she was paid through the brokerage houses by the Carolene Products Company; that they demonstrated at the big Milgram Stores and at the food shows (T. 484), setting up a booth or table where they had an electric mixer and cakes, whipping the product and serving it on squares of cake (T. 485); that they used Carolene in place of cream in cream pies—that a cream pie is a soft pie, such as Boston Cream Pie, a recipe for which was found in the Carolene Recipe booklet; that they used Milnot in making strawberry ice cream with a Junket product (T. 486); that there would be no cream in it but just Milnot and the powder; that all the way through the recipe book they substituted Milnot for cream or white milk, using it for any cooking purposes (T. 487).

MRS. ESTHER RIEGER.

(T. 489-492.)

Direct Examination.

Mrs. Esther Rieger of Kansas City, Kansas, a housewife, stated that she had demonstrated Carolene and Milnot to the public in food shows and in stores (T. 489); that she and Mrs. Buchholz demonstrated the product and explained the contents of the recipe books; that she found there was a wide use of the product by the consuming

public (T. 490); and she had never heard any complaint that there was injury to the health of those who used it; that as a housewife, she had found it a satisfactory article of food.

Cross Examination.

On cross examination the witness testified that the people who were interested in the product were interested both in its price and its usability, including its whipping ability; that they demonstrated to the public the product could be used in any place where milk and cream could be used; that none of her own family had ever gotten sick as a result of using it (T. 491).

Re-Direct Examination.

On redirect examination the witness testified that as a home user she had found the product a satisfactory and useful article of food, and as a demonstrator and one who came in contact with the public she had found it was acceptably received for the purposes for which it was recommended (T. 492).

MORRIS EPSTEIN.

(T. 492-499.)

Direct Examination.

Morris Epstein, a retail grocer of Kansas City, Missouri (T. 492), testified that he had been President of the Retail Grocers Association of Kansas City in 1941, and was on the Board of Directors of Associated Grocers, Inc.; that there were about 300 stores in the Kansas City district of Associated Grocers and that in addition there were branches elsewhere in the state (T. 493); that in Kansas there were similar organizations, there were

about 1,000 Associated Grocer stores in Missouri, and the members of the association handled the product in question; that his store had handled it since it first came on the market, and it was a product which his customers purchased (T. 494); that the product was handled and sold in his store by its trade name (T. 495).

The witness stated that they used the product in their own home and that he had not heard of any history of injury from the use of it (T. 496).

The witness testified that as a merchant selling food and as a person using it in his own home he considered it a useful, wholesome food product.

Cross Examination.

On cross examination the witness testified that they sold both the products in question and evaporated milk, selling the former at three cans for 23c and the other at 3 cans for 26c (T. 497), and they sold more of the evaporated milks than Carolene; that Carolene cost less per case, and at times they made more on it and at times less than on evaporated milk—that during the last year he did not think there had been any times when they had made less on Carolene (T. 498).

VERNON BRISCOE.

(T. 499-503.)

Direct Examination.

Vernon Briscoe stated that he was manager for Milgram Food Stores in Kansas City, those stores handled Carolene, and he used the product in his own home (T. 499); that there was a consumer demand for the product and there was no history of injury; that because of the

whipping qualities it had more uses than a product which did not whip, and it was less expensive (T. 500).

Cross Examination.

On cross examination the witness testified that it was cheaper than heavy cream and he assumed it would take the same place; that they advertised the product in their daily ads, and at the present time it was selling three cans for 22c (T. 501).

That when the product came out, he took it home to try it, liked it, and kept on using it; that he knew of no use for it in addition to the use of whole milk, other than the fact that it would whip, and he knew of no other canned milk that would whip as would Carolene; that when the customers came into the store they would ask for Carolene (T. 502), and some of the customers asked for Carolene Milk; that they did not demonstrate the product as evaporated milk, although it was in the form of milk (T. 503).

JAMES C. HARLINE.

(T. 517-524.)

Direct Examination.

James C. Harline testified that he was president and general manager of the Associated Grocers of Kansas City, which was a retailer-owned wholesale grocery company; that they operated wholesale houses in Kansas City, Joplin and Springfield, having between 550 and 600 stores in the territory (T. 517).

That the Associated Grocers handled the product under consideration, having handled it for years, and it had good customer acceptance; that it was used for cooking.

and in coffee, as people would generally use evaporated milk (T. 519); that it whipped and they could use it for frozen desserts and things of that sort.

That cottonseed oil was generally used as a food product and sold by grocers for that purpose, in the form of salad dressings, shortening and in cakes, and skim milk was generally recognized as a wholesome food product; that they had never had any complaint from their member grocers about the wholesomeness or nutritiousness of Milnot or Carolene (T. 520), and there was no history of injury through its use.

Cross Examination.

The witness testified on cross examination that they bought the product from Litchfield, Illinois (T. 521), most of it being shipped by truck.

RUTH WINCE.

(T. 682-689.)

Direct Examination.

Mrs. Ruth Wince, a housewife of Topeka, Kansas, stated that she had used the product for three or four years (T. 682); that she first bought it when her grocer was out of canned milk and he told her he had a substitute that was used in place of milk, but that if she didn't like it she could bring it back; that her two girls, aged 10 and 12, experimented with the product, using it on cereals and drinking it, and that she had whipped it and used it in cooking and had given it to the girls in place of milk, using it in preference to milk; that that was three or four years ago when the girls began to drink it in place of milk (T. 683); that she had not been able

to get it since December because of a lawsuit, but she would certainly like to continue the use of it.

That she had friends and neighbors who were using it. (T. 684).

Cross Examination.

On cross examination the witness testified that when they first used the product it was called Carolene, and was later called Milnot; that the former had coconut oil and the latter cottonseed oil (T. 688).

H. W. POTTS.

(T. 736-749, T. 791-797.)

Direct Examination.

H. W. Potts testified that he was a wholesale grocer connected with Lux-Witwer Company in Topeka and had been associated with them for 23 years; that they handled a line of staple groceries (T. 736), and as part of his business he had handled the products Carolene and Milnot.

That none of their salesmen, to his knowledge, and with his authority, had ever sold the product as a canned milk, but sold it as Milnot compound.

That he had never authorized or instructed a salesman to sell it for anything except Carolene or Milnot and to his knowledge it had never been sold except in that manner (T. 737).

The witness testified that there were eleven or twelve retail dealers in the city handling Milnot or Carolene, most of them being over on the east side and in north Topeka; that the people in those sections of town were mostly in the lower wage earning class (T. 738).

That the product was not sold in the west and south sides of Topeka because the people there are capable

of buying whipping cream—yet Milnot would do everything that fresh milk or fresh cream would do; that their sales of Milnot and Carolene were about 75% as much as that of canned whole milk, but the sales had dropped off lately because deputies of the Department of Agriculture had gone to the different stores and threatened to have them arrested unless the product was taken off the shelf; that during all the time they had handled the product they had never had any complaint of any character (T. 739).

Cross Examination.

On cross examination the witness testified that recently when grocers called up and asked if they could sell the product he told them that as far as they knew it was all right to go ahead and sell it, having received that information from the Carolene Products Company (T. 741); that when they sold the product to the retail stores, it was delivered in the original package, by truck (T. 745); that they handled evaporated milks, but not Page's Special, or Sobee, or Similac, or S. M. A., or Mull-Soy or Olac.

That they paid \$3.10 a case for Carolene and \$3.72 for Carnation and \$3.57 for Page; that they sold the Carolene for \$3.30, the Page for \$3.77 and the Carnation for \$3.87 (T. 744 and 746); that more was sold on the east side because of the financial standing of the people there, there being more lower income people in that territory; that usually Milnot was sold at two or three cents a can below that of Page or Carnation (T. 747).

The witness stated that he had not received a letter similar to Plaintiff's Exhibit H (T. 792); that he told several retailers that he had been advised that the Caro-

lene people were protecting them in case of a fine or if they were taken into court (T. 793).

Plaintiff's Exhibit H (T. 794), a letter of October 23, 1941, from the State Dairy Commissioner to Lux-Witwer Company, was admitted in evidence. The letter quoted Section 65-707 (F) (2), stating that it was the writer's opinion that the cottonseed oil product could not be sold, and that they would appreciate a notification that Lux-Witwer would cooperate in the enforcement of the law by instructing their employees to refrain from selling the product (T. 796).

The witness testified that he did not tell the retailers that if they were arrested and would plead not guilty the Carolene Company would protect them (T. 797).

V. C. MESSERSMITH

(T. 797-799.)

Direct Examination.

V. C. Messersmith, a grocer who had been in business in Topeka since 1923 (T. 797), testified that they had sold Milnot for a year or two; that they were not handling it now because someone from the State Dairy Division had notified them that it was against the law to sell it and had asked them to remove it from the window and to stop selling it.

That up until that time there had been a good demand for it, because it whipped, because it did not have the taste that the evaporated milk had (T. 798), and because it sold at a cheaper price; that their customers were generally in the lower earning brackets; that he had never heard of any bad results from the use of the product, and there was still a demand for it (T. 799).

JOE SAGE.

(T. 799-804.)

Direct Examination.

Joe Sage, one of the defendants in this action (T. 799), stated that he had two grocery stores in Topeka, having been in business 27 years; that they had handled the product in question about 3 years but were stopped by the present suit; that the product was cheaper than the other milk and people liked it, and it said on the can that it was not to be sold as canned milk; that it was never sold as canned milk; that they had had no complaints about it (T. 800).

That it was a few cents cheaper than canned whole milk—they sold the product four cans for a quarter and sold evaporated milk at three cans for a quarter.

Cross Examination.

On cross examination the witness testified that when they put the product on the shelf they told the clerks that it could not be sold as canned milk; that they had it on the shelf along with other canned milk, and they used this product or one of the canned milks as a leader item (T. 802).

CHARLES OAKLEY.

(T. 810-817.)

Direct Examination.

Charles Oakley, a grocer at 1401 East 6th, Topeka, Kansas, who had been in business there about four years (T. 810), stated that their customers were medium wage earners, and his store had carried Carolene and Milnot; that to his knowledge none of his salesmen had ever

sold or offered it as a canned milk product; generally people picked it up from the displays, and it was one item that sold itself; that they sold as much Milnot as all brands of canned milk put together (T. 811).

Cross Examination.

On cross examination the witness testified that he had received a letter quoting the law, and that Mr. P. R. Woodbury of the Department had called on him (T. 812); that they sell Milnot four cans for 31c (T. 814) and sell evaporated milk four cans for 33c and four cans for 35c (T. 815).

IVAN DIBBLE.

(T. 817-826.)

Direct Examination.

Ivan Dibble testified that he resided in Topeka and had been in the grocery business about 53 years (T. 817); that they had handled Carolene and Milnot for several years, but had stopped selling it on orders from the Agricultural Department; that at their Sixth Street store fifty per cent of the trade was in the lower income bracket.

That in selling the product they never advertised or sold it except under its trade name, and never sold it as milk; that it was a popular article and he would like to continue the sale of it (T. 818); that they never had any complaint from their customers.

Cross Examination.

On cross examination the witness testified that they had received a letter from the State (T. 819), and he stated that he thought Plaintiff's Exhibit J was a copy of a letter from the State Dairy Commissioner, and that

Plaintiff's Exhibit J-A was a letter from his son. The letters were offered in evidence (T. 820).

Plaintiff's Exhibit J (T. 821) is a letter under date of August 1, 1941, from the State Dairy Commissioner to Dibble Grocery, quoting Section 65-707 (F) (2) and stating that in their opinion, the sale of the cottonseed oil product was banned under the Mohler case.

Plaintiff's Exhibit J-A (T. 822) is a letter from John Dibble of the Dibble Grocery Company to the Kansas State Board of Agriculture, dated August 2, 1941, stating that they were willing to comply with the filled milk statute and were discontinuing their sale of Milnut (T. 823).

The witness stated that he imagined when they sold the product, it was about a cent cheaper than evaporated milk, and they made no greater profit on it than on evaporated milk (T. 823).

That the one cent differential would make a great difference with his trade as to whether they would purchase one product or the other (T. 824).

Re-Direct Examination.

On redirect examination the witness stated that even half a cent a can was a material difference with a trade of the class which purchased at his store.

Re-Cross Examination.

On recross examination the witness stated that in displaying the product they would have a mass display or would have it on the shelf (T. 825), and it might have been along in the canned goods section, close to or up against evaporated milk (T. 826).

JAMES CLINE.

(T. 838-843.)

Direct Examination.

James Cline stated that he was a butcher and clerk in the Kross Grocery at 120 East 4th, Topeka, Kansas (T. 838), having been employed there since September; that they handled the product "Milnot" until the time it was against the law to sell it; that they always sold it as Milnot and never for anything else; that most of the customers of the store were on WPA and relief and old age assistance.

That he had never heard any complaint about the wholesomeness of Milnot and used it in his own home all the time; that it had more of a creamy taste than canned milk, did not have the chalky taste, kept longer and was cheaper (T. 839); that now they do not have Milnot for sale to the public but he takes it home himself in preference to canned milk; that his five children use it, drinking it and using it on cereals and in coffee.

That the youngest child, now two years old, used Milnot since birth; that the witness had never heard of any bad effects from the product (T. 840).

Cross Examination.

The witness stated on cross examination that he had never heard of Similac or S. M. A.; that the other children had been fed Armour's Evaporated Milk or were breast fed; that the last baby, fed on Milnot, was the healthiest one of the bunch and never was sick; that the baby fed on Armour's milk had had trouble with constipation.

That a number of the customers had asked for Milnot Milk, but it stated on the can it was milk and was not to be sold for that (T. 841).

Re-Cross Examination.

On recross examination, the witness testified that the baby fed Milnot was now two years old and that he was not fed on Milnot altogether, since he was a breast fed baby, but it was given to him to drink (T. 842).

ARTHUR TOWSLEY.

(T. 843-845.)

Direct Examination.

Arthur Towsley stated that he was in the grocery business at 822 North Kansas, Topeka, Kansas, and had carried Milnot for about two years; that they sold it as Milnot, and had it stacked up on the floor along with other canned goods (T. 843); that the canned milk was in other places in the store.

That the trade accepted the product, it keeping better after it was opened than canned milk and he thought it was very good for making ice cream; that a lot of the poorer class of people used it for whipping, his customers being in the low and medium income brackets; that Milnot sold about a cent a can cheaper than canned milk, and he had never heard anyone complain about its wholesomeness or nutritive value (T. 844).

Cross Examination.

On cross examination the witness stated that when people wanted the product they asked for Milnot or Carolene and if they asked for milk they were given milk (T. 845).

Mrs. B. Kross (T. 826-830), Frank J. Warren, Mayor of Topeka (T. 830-833), Clyde McComas (T. 833), and Peter August Herman (T. 837), all grocers in Topeka.

testified to substantially the same facts regarding the method of sale of the product, its popularity with the trade, its cheaper price, and the fact that there had been no history of injury through its use; as did the other grocers offered by defendants.

P. R. WOODBURY.

(T. 1389-1405, T. 1408-1438, T. 1598-1603.)

Direct Examination.

P. R. Woodbury of Emporia, Kansas, stated that he had been employed as Deputy Dairy Commissioner in the State Board of Agriculture for about three years, and at the request of the Dairy Commissioner, had made trips to various places and purchased Milnot and Milnut.

The testimony of the witness is fairly summarized in the Commissioner's Finding No. 31, which reads.

During the years 1940 and 1941, a deputy dairy commissioner called on a number of retail grocers in the state for the purpose of investigating the sale of defendant's product. The deputy's method of approach was to ask a clerk for cheap canned milk. Many of the 28 stores visited which were selling defendant's product displayed it with or near evaporated milk. In some of the stores the clerk first recommended defendant's product, and in several instances the clerk either first recommended some brand of evaporated milk or some brand of evaporated milk and defendant's product. Many of the clerks either informed the deputy of the nature of the product or read to him from the label, but a majority did not disclose the nature of the product.

MILES CRAIG.

(T. 1483-1486.)

Direct Examination.

Miles Craig testified that he lived in Hutchinson, Kansas, and was Deputy Dairy Commissioner of the State Board of Agriculture; that at the direction of the Board of Agriculture he had made observations during the last year as to the display of Milnut and Milnot in retail stores in Kansas (T. 1483) and that in most cases he found canned milk, condensed milk and Carolene piled together in a pile on the floor, and in other places he found Carolene on shelves right next to the condensed milk; that Milnut and Milnot were displayed in the same way; that he had noticed no advertising signs where Milnut and Milnot was advertised as milk and it was always marked "Milnut"; that the products were always displayed together.

The witness testified that the majority of the purchasers of the product told him that they were buying milk.

KENNETH BAIR.

(T. 1486-1489.)

Direct Examination.

Kenneth Bair of Chanute, Kansas, stated that since November, 1934, he had been a Deputy Dairy Commissioner of the State Board of Agriculture and that during the past year he had made observations as to the retail stores selling Milnut, Milnot and Carolene (T. 1486).

That he made a survey in Wichita and found the product always displayed along with other evaporated milk, in some places being stacked in piles; that usually there was a sign by the product containing the words

"It's so rich it whips" (T. 1487); that sometimes it would be displayed in the center of the store, along with different evaporated milks, but they would not be under any general section heading.

Cross Examination.

On cross examination the witness testified that in grocery stores where meat was sold, usually the lamb, fish and beef were all put in one section of the store, and lards and vegetable shortenings like Spry and Crisco were put on the same shelf, and oleomargarine and butter were usually put in the same refrigerator or under the same sign, usually being listed as "butter" (T. 1488).

J. R. MINGLE.

(T. 1489-1496.)

Direct Examination.

J. R. Mingle, a Deputy Inspector of the State Board of Agriculture (T. 1489), testified that during the last year he had made inspections in the western part of the state with regard to the manner of display of Milnot and Milnut and found that it had been displayed along with the sign "Milk" in the store; that when he called the grocerymen's attention to the fact that the product was not milk, a large number of the stores changed their displays, and later he had found it displayed in other places in the store; that prior to that time it was uniformly displayed along with evaporated milk under a general sign "Milk."

Cross Examination.

On cross examination the witness testified that in one instance a merchant did not change his display to

another part of the store (T. 1492), but in a large number of cases the change was made; that as far as he knew his Department had made no complaints against store keepers for advertising the product as milk or selling it as milk under the labeling act; that he reported to Mr. Dodge that they were advertising the product as milk; but so far as he knew no prosecutions resulted.

Re-Cross Examination.

On recross examination the witness testified that he had no instructions, when he went in the stores, to call the dealers' attention to misrepresentations in the manner of displays or advertising (T. 1494).

OPAL N. LAUCK.

(T. 1496-1501.)

Direct Examination.

Opal N. Lauck, Tecumseh, Kansas, stated that she had used Carolene and Milnot ever since it came out, using it in the place of milk (T. 1496); that she purchased it because it was new on the market and she wanted to try it.

That it was a compound of dried skim milk and cottonseed oil with vitamin A from fish liver oil, and she had read that several times on the can; that she understood from the wording on the can that you could whip the product just like you did cream, and she bought it in preference to milk because she liked it and because it was cheaper; that she was purchasing evaporated milk prior to the time she started purchasing this brand, and there was approximately a cent a can difference; that she remembered a man coming to see her and taking her state-

ment, her statement being on the paper plaintiff's attorney handed her, but she had not talked to anyone else since then (T. 1497); that she had bought the product from several stores, always waiting on herself, and did not remember whether canned milks were displayed along with the product.

She stated that she would continue to buy the product if she knew she were not getting as much in food value as in evaporated or condensed milk for the price paid, because she liked it better than any of the other evaporated milk.

The witness testified that she liked the product in preference to other brands because it had a better flavor and she liked it better in baking.

Re-Direct Examination.

On redirect examination she testified that the product, when chilled, would whip just like cream, and that was one of its desirable features; that she used it for any purpose where she could use milk and if she were not using the product she would have to use cream (T. 1500).

MARJORIE BAILEY.

(T. 1501-1503.)

Direct Examination.

Marjorie Bailey, 14 North Eugene, Topeka, Kansas, testified that her family used Milnot in coffee; that it was delicious and they liked it better than the other cream they bought, and it did not sour; that her mother purchased the product (T. 1501); that she did not notice any other brands on the shelf where Milnot was displayed; that

the label stated that the product contained codliver oil and compounds.

She had read the statement "It Whips" and the product did whip well, and they liked it better for ice-cream; that they did not use the product for milk, but baked with it and used it for coffee, liking it better than the milk (T. 1502).

GERTRUDE BARLOW.

(T. 1503-1504.)

Direct Examination.

Gertrude Barlow, 509 Tyler Street, Topeka, stated that she had used Milnot in her home, but had only used one can; that it had been recommended to her by a lady who had used it for whipping; that she paid 10c for the product and imagined that evaporated milk was selling for 7c. She did not know whether it was displayed with evaporated milk (T. 1503). That it was represented to her as a whipping, by her neighbor (T. 1504).

MRS. DALE BAKER.

(T. 1504-1506.)

Direct Examination.

Mrs. Dale Baker, 310 West Fairchild, Topeka, Kansas, testified that she was head of a household and had five children, the youngest being six months old, and she used Milnot (T. 1504) on fruits, as a whipping, in coffee, and in ordinary ways; that the children had used it for breakfast food, but in no other way.

She bought it because she liked the taste of it; that it was displayed on a shelf to itself, not with other milk in the store, and was on the other side of the store from

condensed milk; that she remembered a man coming out and taking a statement from her but she had not talked to anyone else since; that she had never read the label (T. 1505).

MRS. HENRY CLARK.

(T. 1506-1509.)

Direct Examination.

Mrs. Henry Clark, 900 North Monroe, North Topeka, Kansas, testified that she had used Milnot in her home, for cooking, in gravy, for cereal and coffee, things she had used canned milk for; that before using the product, she had used most any brand of canned milk (T. 1506) but bought this in preference because it did not curdle in the hot coffee, and did not have the condensed flavor she did not like in canned milk. That she discontinued using it because her husband did not like it; that there was about a penny's difference in price between the product and evaporated milks.

That they told her it was not milk and she believed they said it was made of linseed, but she did not read without her glasses; that she used it in the first place because it was cheaper (T. 1507), and the main attraction was "It whips," which meant to her that they could have whipped cream without buying cow's cream, but she never used it that way.

Cross Examination.

The witness testified that other creams like Carnation and Pet could be whipped (T. 1508).

MINNIE FOUNTAIN.

(T. 1509-1513.)

Direct Examination.

Mrs. Minnie Fountain, 422 Paramore, North Topeka, Kansas, testified that she had used Milnot in her home for about a year, using it for breakfast food and baking, general cooking, and whipping; that she did not take any fresh milk and they had no children; that she bought the product because it was cheaper, and when she bought it she thought she was buying condensed milk; that it was displayed on the same shelf with other condensed milk (T. 1509), and in place of taking Carnation she took it.

That she did not remember whether or not she had delivered Plaintiff's Exhibit JJ to a man who had been out to see her (T. 1510), and she did not know whether she quit buying the product on October 28th, the date on the exhibit; that she did not think she gave the slip to Mr. Woodbury; that when tickets were made out when she purchased the product, they were made out "Milnot" or "Milk-Milnut."

Cross Examination.

On cross examination the witness testified that she had not bought any Milnut since last fall, having purchased Page Milk or whole cow's milk, the latter selling for 12c; that Milnot never did sell for 15c a can, and she never bought any quantity of Milnot for 15c (T. 1512).

MRS. HOMER BALDWIN.

(T. 1513-1516.)

Direct Examination.

Mrs. Homer Baldwin, 417 West Fairchild, Topeka, Kansas, stated that she was a housewife and had been buying Milnot since it first came on the market, about 18 months ago, and prior to that she used Carolene; that they had three children in her home, the oldest 13 and the youngest 5.

That she used the product for desserts, icecream and things like that; that the children did not use it on their cereals (T. 1513); that it whipped just like whipped cream.

That she did not buy the product in preference to canned milk or milk but just went and called for Milnot or Carolene.

That the product was cheaper than the other kinds of cream on the market and it was just what her pocket book would fit, and it kept better than the other kind; that she did not remember reading the statements on the can (T. 1514); that it was approximately a cent a can cheaper; that they take bottled milk for the children (T. 1515).

AGNES McMULLEN.

(T. 1516-1519.)

Direct Examination.

Agnes McMullen, 1408 North Van Buren Street, Topeka, a housewife, testified that she had used Milnot (T. 1516), and became acquainted with it when she asked the store lady if she could get something that would

whip other than whipping cream; that the product was handed to her, she read on the can and bought it, and knew it was not a milk; that it whipped easier than canned milk and about as well as cream; that she did not buy the product in order to get milk (T. 1517). That her children drank the product in cocoa, and they also had raw milk to drink; that the product contained some kind of a substance from coconut (T. 1518); that she had never read the new label on the Milnot clear through, figuring it was the same as the old product.

Cross Examination.

The witness testified on cross examination that she knew the product was not milk; that they had been using evaporated milk and wanted something that would whip better and make a better dessert.

Re-Direct Examination.

The witness testified on redirect examination that since getting the subpoena she had talked only to her mother-in-law and just told her that she had the subpoena, and that her mother-in-law had one also (T. 1519); that no one had talked to her about the product since Mr. Woodbury was out there (T. 1520).

MRS. J. L. SMITH.

(T. 1520-1522.)

Direct Examination.

Mrs. J. L. Smith, 1936 Kline, testified that she had used Milnot in her home for a couple of years, buying it to take the place of bottled milk (T. 1520), and used it for all of her cooking, baking, seasoning, or anything she wanted to use milk in, and it could be whipped just as

nice as whipping cream; that she used bottled milk for cereals on account of the children, never having used canned milk for that; that the product went farther and was cheaper than milk, making thicker gravy (T. 1521); that she bought it by just calling for milk and usually bought the cheaper grade; that for one thing, she bought it in order to get a cheap milk (T. 1522).

LAURA WEBB.

(T. 1522-1526.)

Direct Examination.

Mrs. Laura Webb, 1328 North Van Buren, Topeka, a housewife with four children, the youngest four, stated that she was familiar with Milnot (T. 1522) and bought it whenever she could get it; that she used it for icecream and whipping and her husband liked to use it on breakfast cereal; that her husband would not use cow's milk or canned cream in coffee. That she first purchased it to use for icecream. The grocer recommended it to her and said that he did not think it was milk because it did not say milk; that it was a whipping process (T. 1523); that the grocer brought it to her attention that it was not a milk but had linseed oil or cottonseed oil or something in it; that it seemed to agree with everyone and never made anyone sick; that she had read the label a number of times and had told the people who came to her house that she would buy it although she knew it was not milk.

The witness testified that she would buy the product if she knew she were not getting as much in food value as in whole milk, because canned cream was too strong

(T. 1524); that they could not afford to buy cream to whip, and the product seemed to fulfill what they wanted it for.

Cross Examination.

On cross examination the witness testified that by cream she meant canned cream such as Carnation cream or Pet milk; that they could not afford such canned cream, and also it was too strong (T. 1525).

Re-Direct Examination.

On redirect examination the witness testified that the grocer never said the product was cream but said it was a process that would whip (T. 1526).

MRS. ED HAMILTON.

(T. 1526-1531.)

Mrs. Ed. Hamilton, 416 West St. John, a housewife, testified that she had used Milnot about a year (T. 1526); that she sometimes sent the children to the store, giving them a note stating on it that she wanted Milnot or whatever she wanted.

That she first bought it because she wanted something to make icecream out of and the grocer told her that this was a preparation and was good.

That no one had talked to her, since Mr. Woodbury had had her sign a statement; that she used the product for icecream and whipping and fillings, and did not know that she used it for anything other than what she could use milk for (T. 1527); that her grandchildren next door used the product in cocoa, and kept it in her icebox because they did not have one; that they used it to drink just as they would milk.

That she knew she was not buying milk, and prior to buying the product, they did not buy anything except that they might buy Jensen's Cream (T. 1528).

That when she wrote on the slip to the grocer "Send me a can of cream," he knew what she wanted and would send the Milnot.

Cross Examination.

On cross examination she testified that the grocer knew what she wanted when she spoke about whipping cream because he had told her that this was a compound that would whip well (T. 1530); that there were no bad results of any kind from the children drinking Milnot (T. 1531).

MRS. CARL ROBB.

(T. 1531-1533.)

Direct Examination.

Mrs. Carl Robb, 408 East St. John Street, Topeka, testified that she had used Milnot in her home for about a year (T. 1531), and had bought it to use in cooking; that she liked it better than anything else and it did not sour as quickly as the other milk and went twice as far. That when she bought it, she thought she was buying just common ordinary milk (T. 1532).

Cross Examination.

On cross examination the witness testified that she would buy Milnot now if she could get it.

Re-Direct Examination.

On redirect examination she testified that she would not buy Carnation if she knew Milnot did not contain as

much food value as Carnation and if she could buy both for the same price (T. 1533).

MRS. R. D. HAMMER.

(T. 1534-1536.)

Direct Examination.

Mrs. R. D. Hammer, 1107 East 8th, testified that they used milk and cream for their children and used this kind of canned milk for cooking, Carolene and Carnation.

That she had used Milnot (T. 1534), using it for ice-cream; that she understood when she bought it that it was not canned milk, and had something in it to make it whip—coconut oil or linseed oil; that she got that information from her grocer.

That she was familiar with ordinary canned milk and never did have much luck whipping it, but Milnot would stand up just like whipping cream; that she thought she was getting a canned milk with something else in it to make it whip (T. 1535).

MRS. DORSEY LYNCH.

(T. 1536-1539.)

Direct Examination.

Mrs. Dorsey Lynch, a housewife of 1045 Chester, testified that they had used Milnut or Milnot for cocoa, in cooking, for whipping cream, icecream and cakes; that they drank raw milk; that she bought it when she noticed that it said it would whip (T. 1537).

That it was not setting on the shelf with Armour's canned milk, but was over to the side; that the product had fish oil in it and used to have coconut oil and was

skim milk, that being on the label; that she would rather have it than all the other creams (T. 1538).

Cross Examination.

On cross examination she testified that the creams she referred to were products such as Carnation and Armour's (T. 1539).

HARVEY LYNCH.

(T. 1539-1542.)

Direct Examination.

Harvey Lynch, 1723 East Crane, the head of a household, stated that they bought canned milk (T. 1539) and had used Milnot until a little before Christmas as one of the brands (T. 1539).

That when he bought it he knew it was some kind of a preparation and he had heard some of the neighbors say they liked it; that he had not talked to his groceryman about this case; that he did not know what the product contained (T. 540), and had read the statements on the label but had never paid any attention to them.

That he knew he was not getting milk; that he would buy it if he could in preference to nationally known evaporated milk at the same price and if he knew he was not getting as much food value in Milnot.

Cross Examination.

On cross examination he testified that the neighbors had told him about Milnot and he went to the store and asked for Milnot (T. 1541).

MRS. W. T. HANNA.

(T. 1542-1543.)

Mrs. W. T. Hanna, 1714 East Crane, Topeka, testified that they had used Milnot; that her brother had told her about Carolehe and she did not like canned milk so tried it; that she liked the taste of it, and knew it was not really milk but she bought it to take the place of canned milk (T. 1542); that if she could buy Carnation milk for the same price, and if she knew she was not getting as much food value in the Milnot, she would continue to buy the Milnot (T. 1543).

B.

The Label, Packaging, and Physical Characteristics.

DEFENDANTS' EVIDENCE.

CHARLES HAUSER.

(T. 29-108.)

Direct Examination.

Charles Hauser, President of the Carolene Products Company, testified in regard to the label used on the cans of Milnot and Carolehe that he was present with Mr. Knotts and Mr. Clark when the label was submitted to the Federal Food and Drug Administration; that about a year and a half before, they met with Dr. Elliott in the Federal Food and Drug Department (T. 52) and submitted photographs of various forms of labels which had been prepared by the designer, and Dr. Elliott and his associates made suggestions for changes in the label.

That the coconut oil product was being changed over to the cottonseed oil product and Dr. Elliott did not want them to use the name "Milnut" because that name indi-

ated that the product was a nut product, and would be somewhat deceiving; that he did not like the wording "So Rich It Whips," although he said there was no objection to saying that it did whip; that Dr. Elliott or his assistant, Mr. Kirk, suggested that the words "Not To be Sold For Evaporated Milk," be replaced by the words "Not Evaporated Milk or Cream"; that some of the old labels contained the picture of a cream pitcher (T. 53) and Dr. Elliott thought that could be improved on as it might be taken for a suggestion that the product was milk or cream; that the witness suggested to Dr. Elliott at that time, or at a later time, that the cream pitcher could be replaced by showing a can from which the product was being poured.

That all of the criticisms and suggestions made by the Administration through those men were followed by the Litchfield Creamery Company in the final design of the label; that the new label was an entirely different label than the one used on the old product in Kansas, the old label never having been submitted to the departments.

The witness stated, after defendants' counsel had said that they did not intend to imply that the label had been approved by the Food and Drug Administration, the representatives of the Department simply criticizing the label and making suggestions, that he did not mean to say that the Department had approved the label (T. 55).

The witness stated that he did not remember that Dr. Elliott had said anything about their right to sell the product in Interstate Commerce; that three or four weeks ago a complaint was filed by the Federal Trade Commission against his company concerning the use of the label (T. 59).

The witness stated that they did not advertise the product as "an amazing milk compound," although it was possible that something like that had gotten out at some time.

That people using Milnot would not be using milk or cream because of the expense (T. 72); that if they did not use Milnot, they would use milk or skim milk or dried skim milk and a vegetable fat or evaporated milk, but in the majority of cases they would go without because of the expense and lack of convenience in obtaining the milk or milk products (T. 73).

That the product, at the present time, sold for some six to seven cents, in some cases a little more; that he did not think it was correct to say that the product sold at the same price as evaporated milk, because it cost the jobber fifteen to twenty percent less and he assumed that the same margin would be taken on each product; that the words "A high grade wholesome food product especially prepared for use in coffee, baking and for other culinary purposes" implied that the product could be used where milk could be used, as well as for other purposes or reasons (T. 74); that with reference to its use in coffee, it was strictly a matter of taste.

That the patent on the product had expired (T. 75); but an application had been made for a patent on the new product, which contained cottonseed oil and an increased solid content (T. 76); that he was a little reluctant to discuss the manner of manufacture of the product in view of the fact that the representative of the Evaporated Milk Association was sitting there (T. 77).

That from time to time their traveling representatives were furnished with some advertising; that the prod-

uct was put up in 14 1/2 ounce cans, the same size cans that were used for evaporated milk; that several years ago, the milk evaporators used a 16 ounce can but all changed to the smaller can; that they also used a 6 ounce can (T. 90), and Milnot was put up in a 6 ounce can (T. 91).

GRACE VYALL GRAY.

(T. 314-345.)

Direct Examination.

Grace Vyall Gray, home economics expert and director of the Better Home Making Institute, Chicago, stated, in regard to the appearance of the product in question, that it was a compound. She stated that nylon was a fabric used in the making of stockings and although it contained no silk, the ordinary person could not tell it from silk; that Crisco and Spry had all the appearance of lard and were put to the same uses, but they were vegetable shortenings (T. 330).

Cross Examination.

On cross examination the witness testified that the product looked very much like evaporated milk but had a slight difference in taste; that the Milnot had a little nicer and truer flavor than evaporated milk, which had a touch of caramelization, and the ordinary housewife distinguished the two products; that the texture was comparable to evaporated milk (T. 333); that she liked the product better than evaporated milk and three-fourths of the faculty in her Institute drank it and preferred it to whole milk (T. 334).

NORMAN BRUCE.

(T. 345-363.)

Direct Examination.

Norman Bruce, a graduate chemist connected with Durkee Famous Foods Company, testified in connection with the appearance of the product that there were innumerable instances where one would not know what was in a product without consulting the label, particularly in regard to a great number of prepared food products. (T. 359).

BENJAMIN R. HARRIS.

(T. 394-412.)

Direct Examination.

Benjamin R. Harris, a chemist, testified in connection with the appearance of the product that there was no detectable difference in the color of colored oleomargarine, which was sold subject to the payment of the Federal tax, and yellow butter; that in general there was no detectable difference between dairy butter and oleomargarine by taste or smell, and the average consumer could detect no difference; that the public depended upon the label to determine what they were buying and what they were consuming; that there were a great many other products used interchangeably for human food that could not be detected from each other by the consumer without the aid of the label or the statement of the processor (T. 404).

That one of the principal reasons for incorporating labeling requirements in the Food and Drugs Act was to furnish the consumer with the means which he would not otherwise have for differentiating between food products

of similar taste, color, appearance and consistency. That in general the Government authorities and the public had considered labeling requirements on products, which might be used interchangeably, as sufficient protection to the public in the use of those foods (T. 405).

VI.

Question of Administrative Difficulty.

DEFENDANTS' EVIDENCE.

ALLEN GOLD.

(T. 938-947.)

Direct Examination.

— Allen Gold, a biochemical analyst connected with the Latimore Laboratories in Topeka, Kansas, testified that it was entirely practical for biochemists or chemists engaged in the practice of analyzing foods to analyze a product of skim milk, cottonseed oil and natural concentrates of vitamins A and D for the purpose of determining the vitamin content; that it was very commonly performed by food chemists throughout the country and as such tests went was an inexpensive thing to do.

That it was practical for food chemists, by recognized simple tests, to analyze a food compound of evaporated skim milk, vegetable oil or oils and vitamin A and D concentrates, for the purpose of determining whether the vegetable oil was coconut oil or a hydrogenated oil of other source; that it was an inexpensive test for laboratories equipped to do it (T. 940); that almost any laboratory doing food or fat work would be so equipped; that the tests could be made the same way if the product had been reduced by evaporation of water to 40% of its original volume (T. 941).

HOWARD J. CANNON.

(T. 962-972.)

Direct Examination.

Howard J. Cannon, a chemist and head of the Laboratory of Vitamin Technology of Chicago, stated that he made assays of Milnot and Carolene from time to time in order to determine the vitamin content. That the Carolene Products Company had given the witness a blanket order so that he could procure samples of the product on the open market in any state where sold and they had further directed him to conduct vitamin A and D assays from time to time to determine whether the potencies confirmed the label claims; that they usually bought a sample of Milnot through a wholesale grocer in a given state, having Western Union Telegraph Company make the purchase (T. 962), and the product was shipped to the laboratory where an assay was made, the Carolene Products Company being entirely unaware of the transaction at the time it was being made.

That the Carolene Products Company makes every effort to manufacture a product containing at least the vitamin A and D potency claimed on the label and they feel it is best to have the tests handled by disinterested parties from the very beginning so that the analysis will be as unbiased as possible (T. 963).

That the results of such tests are furnished to any states which request them.

That it is a very common practice to make assays for the purpose of determining the constituents of food products and the Federal Government does a great deal of that work with reference to all products shipped in Interstate

Commerce; that the Government is equipped to make vitamin determinations as well as other determinations and there are quite a number of institutions in various parts of the country capable of doing that work (T. 964).

That any laboratory properly equipped could analyze Milnot to determine its vitamin A and D content and the other constituents to see if it conformed with the label; that there are a great number of those laboratories so equipped, both in private practice and in Governmental practice; that by well established and recognized methods of assay, determinations as to the milk solids, the fat content, the protein content, the carbohydrates, the mineral salt content and the water content of the product could be made, and the vitamin A and D potency could be determined without any trouble; that such work is done by the Food and Drug Administration and in private laboratories and in laboratories maintained by the larger food processors and manufacturers.

That from the chemical standpoint they could distinguish by analysis the difference between Milnot and any other product, and could easily make an analysis to verify the claims of the label (T. 965); that such tests would be comparatively reasonable in cost; that in the case of Milnot, the state requesting the test generally requested the manufacturer to bear the expense of it; that merchandise such as Milnot, which was shipped in Interstate Commerce, was subject to tests from time to time by the Federal Government.

That the witness had tested numerous samples of Milnot and had invariably found that the vitamin A and D content was substantially higher than the label claims; and evidently the Carolene Products Company had pro-

ected itself and the consumer by putting in a substantial overage (T. 966); which generally ran about 20 to 25%, a very satisfactory margin of safety.

Cross Examination.

On cross examination the witness testified that the Babcock test was designed specifically to determine the butterfat content of milk or milk products and he did not think it would determine the quantity of fat in Carolene.

That the most scientific way of determining the quantity of fat in the product would be to extract the fat with a solvent, then evaporate the solvent and weigh the residue; that the Babcock test was more or less a superficial test, being accurate within reasonable limits (T. 968) but most laboratories would not use it; that the method he had detailed had been in use for many years.

That in making vitamin A and D tests on Carolene, Milnut and Milnot, the witness had never found an instance where the vitamin content was less than the label claims; that the official methods of assay for vitamins A and D prescribed the use of animals and the witness used rats (T. 969), and in testing for vitamin A they depleted the rats of that vitamin by feeding them a diet devoid of it, then part of the rats were fed a diet supplemented with standard codliver oil, and another group received the vitamin A-free diet plus the sample to be tested; that the tests usually lasted 28 days (T. 970), and growth responses were then compared between the two groups; that there are numerous laboratories equipped and qualified to run the tests.

Re-Direct Examination.

On redirect examination the witness testified that the elapsed time for the vitamin D test was about 30 days, with the actual prescribed time being 7 days for the assay period (T. 971); that the animal tests were the only officially recognized tests for vitamins A and D, as required by the Federal Food & Drug Administration, and as far as he knew no State law recognized the chemical test (T. 972).

PLAINTIFF'S EVIDENCE.

HARRY DODGE.

(T. 1545-1585.)

Direct Examination.

Harry Dodge, State Dairy Commissioner, whose qualifications are set out at Page 474 of this Abstract, testified that the Babcock test was a test for arriving at the percent of butterfat in milk and cream, and had been invented by Professor Babcock of Wisconsin in the early nineties; that it was a standard test in Kansas by statute, but the witness or his deputies could not determine by the Babcock test whether the fat in a product such as Milnot was butterfat or was some vegetable oil (T. 1553).

That in his opinion the sale of such a product as Milnot could not be effectively regulated if not prohibited, because you could take cream and dilute it with a certain percent of vegetable oil, like cottonseed oil, and a 10% dilution could not be distinguished by chemists; that they could not catch it because butterfat is made up of about 22 or 24 fatty acids (T. 1553) and vegetable oils have about six, which are similar to some of the 24; that he had secured that information from both the State

College and the Federal laboratory, and furthermore, they would not have enough men around to police the whole country and it would take an army of men to check up on the thing to see if the article was adulterated; that there were a lot of grocery stores in the State and the witness would not be in a position to check all of them to determine whether the product was being misrepresented or whether consumers knew what they were getting; that as for confusion in the sale or purchase of the product it would be a difficult problem to handle so far as regulation was concerned (T. 1554).

DEFENDANTS' REBUTTAL EVIDENCE.

DR. ROBERT S. HARRIS.

(T. 1625-1669.)

Direct Examination.

Dr. Robert S. Harris, Associate Professor of Nutrition and Biochemistry in the Massachusetts Institute of Technology, whose qualifications are set out at Page 362 of the abstract, testified that in the course in food chemistry which he taught, the students learned the procedures employed by the official agricultural chemists for testing foods; that it happened that last term, he gave a student a blank sample of Milnot and asked him to find out what it was. The student reported that it was not evaporated milk and said he was not quite sure but thought there was cottonseed oil in it, although the cottonseed oil had apparently been treated some way; that the witness felt that administrative authorities should not be lazy on such a matter and that it was perfectly possible to detect or develop methods for the detection of adulterations (T. 1645); that they should not freeze con-

ditions as they are but should develop new methods of analysis.

That it would be possible to determine any of these oils if one wanted to and it was possible to differentiate cottonseed oil from butterfat or find out whether a significant quantity had been added to butterfat in the manufacture of the milk product; that various Federal and State agencies, in the enforcement of the pure food laws, were continually developing their methods to meet the new conditions as they arose; that the boy in his class he referred to was only a junior and had had no experience, but he was able by using certain constants in the text books to find out that the product was not butterfat, and the test was not expensive; that the change in the iodine number reported by the student was due to hydrogenation of the cottonseed oil (T. 1646).

VII.

Economic Considerations.

A.

Effect of Manufacture and Sale of Product on Consuming Public.

DEFENDANTS' CASE.

CHARLES HAUSER.

(T. 29-103.)

Direct Examination.

Charles Hauser of Litchfield, Illinois, president of the Carolene Products Company, testified that prior to the time when skim milk was used in the manufacture of the product in question a lot of it was used for animal feed, and some casein was made from time to time, as well as some

of the milk being dried, but to a large extent it was the practice for the dairies to use principally the cream from the milk, and the skim milk was made into casein or fed on the farm or wasted; that in the manufacture of Milnot and Carolene all of the skim milk from the milk coming to the plant is used (T. 39).

The witness stated that the practice of feeding skim milk to animals was and is a large economic waste, because there was no doubt that skim milk contains by far the greater portion of the food value of whole milk, and it contains the very important easily digested proteins, carbohydrates, minerals and vitamins of milk, with the exception of vitamin A; that the newer knowledge of refining vegetable oils and replacing vitamin A made milk fat much less important than it was 20 years ago; that in those times they did not know how to replace vitamin A in milk, although whole milk was not a particularly good source of the vitamin, and at a time when fresh leafy vegetables were not used throughout the year, there was probably a better reason for stricter regulation than now.

That skim milk is referred to as sort of a secondary product, because it does not appeal to the taste, is bulky and is not convenient, but in the product in question skim milk is found in a form that is palatable, convenient and economical (T. 41); that it is pretty generally agreed that the water soluble vitamins found in the skim milk are the important elements to get into the human system.

That it was a great accomplishment to be able to get the elements of the milk outside of fat into human consumption because the consumption of milk in this country is slightly more than one-half of what good nutritional practice would suggest, and formerly about 85% of the

skim milk was wasted as far as human consumption was concerned, and people in the low income brackets got much less than the average of milk and cream, both because of the high cost and lack of a convenient and approved supply.

That the milk supply around the large cities was not available to the people in the small localities and the people beyond the tracks in the large cities, because the cost was too high (T. 42), and the important thing to be accomplished by the use of skim milk was overcoming that deficiency in the lower income brackets with a product that is economical and convenient, and yet appeals to the taste.

That in selling milk from the farm it is priced both on the fat content and on the volume and to a large extent the trouble with the dairy industry was that they over-emphasized the importance of milk fat, with resulting restrictions on the sale because of the high price (T. 43).

Cross Examination.

On cross examination the witness testified that if consumers did not use Milnot, they might use some form of milk for the particular purpose but in the majority of cases they would go without because of the expensive cost of the other product and the lack of convenience in obtaining it, and evaporated milk costs 15% to 20% more than the product in question; that the price of the product depends on the retailer in question, on the jobber and the kind of a store (T. 73), and at the present time in Kansas it probably sold at 6c to 7c a can. He did not think it was correct to say it sold at the same price as ordinary evaporated milk, and as it cost the jobber 15 to 20%.

less he assumed that on an average the same margin would be taken in the case of both products (T. 74).

That the skim milk which was wasted came largely from the manufacture of butter.

Re-Direct Examination.

On redirect examination the witness testified that casein, which was produced from skim milk, was a product from which buttons, billiard balls, etc., were made; that dried skim milk was largely used for bread, ice cream, candy and things of that kind (T. 103):

EARL S. HAINES,

(T. 280-308.)

Direct Examination.

Earl S. Haines, Executive Secretary of the Institute of Shortening Manufacturers, Inc., whose qualifications are set out at Page 484 of this abstract, testified that the statistics of the United States Department of Agriculture, released at the recent Food for Defense conferences, showed that the outlook was for a rather serious shortage of milk and milk products in view of the European buying program and the defense program; that releases of information by the dairy people themselves called attention to the serious under-consumption of milk, butter and milk products, and Dr. Tulley, Chief of the Bureau of Agricultural Economics (T. 295), stated that if we had an adequate consumption of butter and whole milk in this country we would need 15,000,000 more dairy cows. In the great dairy belt you would have a surplus of milk but only seven of the 48 states produced more than 36 pounds of butter per capita per year, that being the

amount recommended by Dr. Stiebeling for an adequate diet (T. 297).

That at the regional conferences referred to above, the fats and oils group was one of the most important of the food groups considered, and no group of foods was given the importance that was given it in relation to defense and the probable outlook for furnishing foods for Europe and England following the war (T. 299).

That if a cheaper food which would fit in with a diet could be produced for the benefit of the underprivileged, that would tend to eliminate some of the underconsumption and would decidedly be in the public interest (T. 300).

Defendants' Exhibit 30 (T. 301), a chart entitled "The Universe of Edible Vegetable Oils," showing the production, amount of imports, consumption and average price of various vegetable oils in the year 1940, was received in evidence.

Cross Examination. —

On cross examination the witness testified that there was a total shortage of table fat, including butter and margarine, due to the fact that consumer income was too limited to purchase an adequate amount of the higher cost butter, leaving a deficit of 16 pounds per capita; that the Steibeling report showed that 36 pounds of table spread, not including shortening, should be used by each person and the total recommended fat consumption was 57 pounds (T. 302). That the artificial barriers such as the tax program and the licensing of distributors kept the lower cost products from getting into the markets for the lower income people (T. 303); that the Government purchased

quite a substantial amount of butter during the past five years to stabilize the market; that both the imports and exports of butter are very small.

GRACE VYALL GRAY.

(T. 314-345.)

Cross Examination.

Grace Vyall Gray, home economics expert and director of the Better Home Making Institute, testified that she would consider a mixture of skim milk and cottonseed oil fortified with vitamins A and D, selling at 7 or 8 cents for a 14 1/2 ounce can, that being about 6% cheaper than evaporated whole milk, to be an inexpensive source of skim milk solids and a benefit to the consuming public; that cream gives the butterfat but you get protein, phosphorus, iron and those food elements in the skim milk; that ~~people need the protein and the minerals but will get the fat~~ (T. 340); that they are getting the skim milk in the dried form, and when a housewife buys Milnot, she gets all the extra food elements that are in it.

That she considered such a product as Milnot to have equal nutritional value to whole milk, and recommends it and uses it all the time; that women know what they are buying when they buy such a product (T. 341). That she would not recommend a product if it created in the mind of the purchaser that it was in fact milk when it was not, but she did not know of any kind of marketing like that (T. 342).

Re-Direct Examination.

On redirect examination the witness testified that Milnot was more nutritious than evaporated milk if it

uniformly contained more vitamins A and D than the standard brands of evaporated milk; that vitamins are recognized as necessary to the proper nutrition of the public.

DR. ANTON J. CARLSON.

(T. 412-456.)

Direct Examination.

Dr. Anton J. Carlson, Physiologist of the University of Chicago, whose qualifications are given at Page 102 of the abstract, stated that it was of paramount importance to use all the nutrients in milk for human nutrition instead of putting them into glue or fiber for clothing, or into animal feed; that we at least get something back in the way of human nutrition when skim milk is fed to hogs and chickens but it is completely lost when used for glue or fiber.

That he believed the statistics showed that over 100,000,000 pounds of casein, the valuable protein in milk, went into industry, away from human nutrition and food, and that the general supposition in the United States that skim milk was not fit for human food should be corrected by education and not impeded by laws; that as a matter of fact skim milk was an extremely valuable and important food.

PLAINTIFF'S EVIDENCE.

The following witnesses called by the plaintiff all testified that they used Caroleme and Milnot, and that one of the reasons they bought it in preference to evaporated milk was because it was lower in price.

Opal N. Lauck (T. 1496); Mrs. Henry Clark (T. 1506); Minnie Fountain (T. 1509); Mrs. Homer Baldwin (T. 1513); Mrs. J. L. Smith (T. 1520); Laura Webb (T. 1522).

B.

Effect of Manufacture and Sale of Product on Producers of Milk
and Producers of Cottonseed Oil.

DEFENDANTS' EVIDENCE.

CHARLES HAUSER.

(T. 29-107.)

Direct Examination.

Charles Hauser, president of the Carolene Products Company, testified that there were evaporated milk plants within the vicinity of Litchfield, one at Greenville, Illinois, about 30 miles away, one at Edwardsville, Illinois, and one at Bunker Hill, Illinois.

That there was a suggested minimum price to be paid farmers for their milk, the price being established by agreement with the Agricultural Adjustment Administration and being based on the price of butter and cheese plus a certain overage; that the Evaporated Milk Association sends out the price list to the evaporators (T. 44).

Defendants' Exhibit 1 (T. 45), being Raw Milk Price Bulletin No. 211, headed "Organization of the Evaporated Milk Industry under the Agricultural Adjustment Administration, 307 North Michigan Avenue, Chicago," and giving the prices paid for 3.5 percent raw milk at evaporated milk plants in the North Central States, was offered in evidence. The exhibit gave the prices paid in January, 1941, January, 1940, and December, 1941.

Defendants' Exhibit 2 (T. 46), being a similar price list showing prices paid in June, 1941, June, 1940, and May, 1941, was offered in evidence.

The witness testified that those price lists did not include the names of the evaporating plants in the territory

of Litchfield, which he had listed above; that the lists did not contain the name of his plant or the plants within the territory served by him and their plant generally paid decidedly more for their milk than the prices shown in the two exhibits (T. 47).

Cross Examination.

Plaintiff's Exhibit D (T. 79), being a bulletin of July 31, 1941, entitled "Minimum Prices To Be Paid for Raw Milk According To the Formula Provided in the Evaporated Milk License made Effective by the Secretary of Agriculture, June 1, 1935," and containing the heading "Organization of the Evaporated Milk Industry under the Agricultural Adjustment Administration, 307 North Michigan Avenue, Chicago," was offered in evidence.

The witness testified that it was his understanding that the minimum prices for the entire dairy industry were fixed through the Agricultural Adjustment Administration in collaboration with the Evaporated Milk Industry (T. 80); and the price fixed was the minimum price but the companies could pay more.

That defendants' Exhibits 1 and 2 purport to be a list of prices actually paid by the various companies but they do not include the prices of the factories immediately adjacent and competitive with the factory of the witness, which usually are decidedly higher; that the price list came in the envelopes of the Evaporated Milk Association (T. 81) and he had no doubt the Evaporated Milk Association had something to do with the fixing of the prices (T. 82).

That in the making of evaporated milk there was no skim milk left (T. 83), for it was the usual practice to add cream if it was too low in butterfat and to use all

the solids; that the skim milk which was wasted largely came from the manufacture of butter, the cream being made into butter and the skim milk being used for animal feeding or making casein.

That the figures of the Department of Agriculture show that about 85% of the skim milk is wasted as far as not being used for human consumption; that skim milk runs around 50 or 60 cents per hundred pounds and is usually bought only in the surplus time of the year, during April, May and June, from the other plants (T. 84); that the plant of the witness also manufactures butter (T. 85).

That from an economic standpoint it was better to use the skim milk, that otherwise goes to waste, for the benefit of the poor people; that as far as the skim milk produced by other plants the Litchfield Creamery Company created a market only to the extent of about 3% of their production, but they did not contribute to the waste since they utilized the skim milk to what they considered an excellent advantage (T. 86).

That over a period of time his company had influenced the increase in the dairy business in the vicinity of Litchfield; that the increase in production there did not help the dairy industry in Kansas but if Kansas produced such a product the dairy business there would be improved (T. 91); that for instance the three evaporated milk plants in Kansas bought less milk last year than was used in in the Litchfield plant in the first six months of this year; that if the farmers sold their milk to the butter and cheese manufacturers in Kansas, they would have a market a good deal the same as if it was sold to the manufacturer of evaporated milk, but the market was not considered to be as good.

That it would be reasonable to assume that a plant manufacturing Milnot or Carolene in Kansas would benefit the dairy industry in Kansas something like it had in the vicinity of Litchfield (T. 92); that, if there were plants in Kansas the farmers would be paid a great deal more for their milk, because in the first place a better butter would be produced and there would be a better utilization of skim milk, that furthermore the undernourishment existing in Kansas because of the underconsumption of dairy products would be overcome (T. 94).

That in 1940, 3,668,000 pounds of butter was sold at the Litchfield plant for \$1,075,162.92, and 1,700,000 pounds was sold at the Warsaw plant for \$533,957.50 (T. 100).

Re-Direct Examination.

On redirect examination the witness testified that there was a shortage of evaporated milk and the evaporators had been asked by the Government to increase their production by something like 24% over the 1940 production; that approximately 4% of the milk produced in this country went into evaporated milk, there had been an increase in its production for the last several years. It had substantially increased in the 15 years ending in 1938 and since that time the percentage of increase had been somewhat larger (T. 104); that in 1934 slightly over 13,000 producers sold milk in the St. Louis market, and approximately 1,100 producers sold milk to the Litchfield Creamery Company (T. 105), while at present slightly over 4,000 producers were selling on the St. Louis market and around 3,300 or 3,400 were selling to the Litchfield Creamery Company; that in 1934 the intake at the Litchfield Creamery Company was roughly 50,000 pounds of milk daily

while at the present it was in excess of 300,000 pounds (T. 106).

Defendants' Exhibit 3 (T. 107) a communication from the organization of Evaporated Milk Industry under the Agricultural Adjustment Administration, showing D. F. Stilling in charge of administration, and Frank E. Rice as Managing Agent, and containing a statement "Direct all mail care of Evaporated Milk Association, 307 North Michigan Avenue, Central 9197, Chicago, Illinois," was offered in evidence.

Defendants' Exhibit 4 (T. 107), a communication from the Evaporated Milk Association, 307 N. Michigan Ave. Chicago, phone Central 9197, dated September 4, 1941, entitled "Legislative," was introduced in evidence.

• JOHN F. MOLONEY.

(T. 197-230.)

Direct Examination.

John F. Moloney, of Memphis, Tennessee, economist with the National Cottonseed Products Association, and a graduate of Columbia University with a Master's Degree in economics, stated that he had held his present position since 1936; that prior to that time he had worked six or eight months with the National Association of Margarine Manufacturers, and for six months prior to that time he had been with the United States Bureau of Labor Statistics in Washington.

That the National Cottonseed Products Association was a trade association, the members being the cottonseed oil mills, the refiners of cottonseed oil, and the brokers, dealers and chemists affiliated with the oil mill

industry; that the industry was engaged in the processing of cottonseed into the various products (T. 197), including edible oils.

That as economist for the association his work was of many types; that his work included the study of markets and marketing of cottonseed products and their relation to the National economy; that 90% of cottonseed oil went into food products (T. 198).

The witness testified that the total agricultural income of the United States for 1940 was \$8,354,000,000 and of that amount the cotton crop accounted for \$660,000,000 (T. 199).

That cotton is raised primarily on small and poorly financed farms and the grower generally mortgages his crop to finance himself; that the practice is never to enforce a mortgage against cottonseed so the seed is frequently the grower's major source of cash at the end of the season; that therefore the grower is in many instances more sensitive to the price received for the cottonseed than that received for lint (T. 200).

That the consumption of cottonseed oil and lard has increased (T. 203) and there has been practically no change in the consumption of butter; that in stating that there was a parallel between the lines of consumption and prices of oils and fats, other factors entered into the picture; that for example, the creamery industry was much disturbed because of the diversion of milk to cheese and evaporated milk for shipment under the Lend Lease Act, for they saw a serious problem in the cutting down in the supply of raw material available for their industry (T. 204); that the use of cottonseed oil as an edible fat had a very definite relationship to the economic welfare of the

cotton belt, for cottonseed oil accounted for about 55% of the total value of cottonseed products; that when any market for cottonseed oil was restricted the tendency was for it to affect the entire price structure of the oil market, having a depressing effect on the entire price structure of cottonseed oil (T. 205) as well as on the price of lard.

PLAINTIFF'S EVIDENCE.

EDWIN W. TIEDEMAN,

(T. 1260-1272, T. 1328-1350.)

Direct Examination.

Edwin W. Tiedeman of Belleville, Illinois, testified that he had been operating a dairy farm for 25 years and had been president of Sanitary Milk Producers for 13 years; that the latter was a cooperative association of dairy farmers in the vicinity of St. Louis (T. 1260), those farmers selling milk to St. Louis distributors and evaporating plants and cheese and butter factories in Missouri and Illinois.

The witness stated that he was a member of the Board of Directors of the National Cooperative Milk Producers' Federation, Secretary-Treasurer of the Producers Committee under the National Evaporated Milk Licensing Agreement, Vice-President of the St. Louis District Dairy Council, had appeared on various dairy programs, and had acted in advisory capacity to producer groups, and as arbitrator in several markets (T. 1261).

That his duties made it necessary for him to be thoroughly grounded in the economics of milk production and distribution and that he kept abreast of economic con-

ditions and trends in the dairy industry, studying current publications.

That supply and demand conditions determine the prices received by producers of milk, and basically the price depended largely upon the butter market, butter being the barometer of the dairy industry (T. 1262).

The witness stated that all of the milk prices are quoted on milk containing a given amount of butterfat; that in his opinion it was a sound marketing practice to quote prices on that basis, varying the price as the butterfat content varied, because the butterfat in milk varied from 3% to 6%.

That 40% of the milk in the United States was sold as liquid milk or cream, about 5% was made into evaporated milk, about 4% into cheese, a smaller amount into ice cream and the balance that was not used for feeding purposes on the farm was churned into butter.

That the price of butter had a definite effect on the prices of the other by-products of milk (T. 1264); for it controlled the surplus and therefore controlled the price of the commodity, butter being the end point to which milk was put which could not be used in any other way; that the price of butter varied according to ability of the general public to buy; that there was no more desirable method for determining the price of raw milk and it would not be feasible to predicate a return to the farmer on the basis of skim milk content because there was no known method of determining the value of solids not fat, there being no national pricing method similar to the national butter market; that the price of butterfat was based on supply and demand while the value of skim milk would depend upon the ability of the producer to use it (T. 1265);

that for instance a farmer with a large herd of pigs or some chickens or calves to feed would value it higher; that there was not a surplus of skim milk, and it was principally used for the manufacture of skim milk powder or casein; that he did not think there would be any change in the present pricing system as long as the public preferred to buy milk containing butterfat (T. 1266).

That the price paid for liquid milk sold to a city market depended on the competitive price being paid by creameries and evaporating plants and cheese plants, which was determined by the butter price plus the cost of even production necessary in a city market plus a sum needed as an incentive for a man going from one market to another.

That he was familiar with the dairy situation in southern Illinois, within a hundred mile radius of Litchfield, and there were at least 2,000 producers there (T. 1267).

That he considered the continued manufacture and sale of filled milk as the most serious threat facing the dairy industry because it involved the substitution of a vegetable fat for butterfat with the result that large quantities of butterfat made available by the manufacture of filled milk were thrown on the national butter market; that because of the profitable nature of the business large numbers of evaporated milk manufacturers would go into the filled milk business if permitted and the results would be that enormous amounts of butter would be thrown on the national market and the price would be depressed, resulting in a lower price to every dairy farmer; that the sale of filled milk necessarily lessened the sale of evaporated milk, so the farmer would suffer doubly (T. 1268).

That the Dairy Products Manufacturing Association purchased nine to ten million pounds of butter in 1940 and eleven to twelve million pounds in 1941, in an attempt to keep the price from going too low; that if the Litchfield plant produced six million pounds, that would be about half of the amount purchased by that division (T. 1269).

That through the operation of the Litchfield Creamery Company and the Carolene Products Company the dairy farmer was injured by the loss of sales due to the substituted product and by the amount of extra butter forced on the national butter market, and if the amount of butter increased materially, it would lower the standard of living of the dairy farmer; that the operations of the Carolene Company did not help to eliminate the surplus of skim milk because they created extra amounts by removing the butterfat; that they used only a small amount of the surplus produced by other sources (T. 1270), and there was no possible benefit to dairy farmers through the manufacture and sale of filled milk; that it was a definite threat and he knew of no possible argument showing that it would be beneficial to dairy farmers; that the maintenance of a sound dairy economy was necessary to the maintenance of a high quality milk supply and there was a direct relation between the high quality of milk produced and the prosperity of the dairy farmer (T. 1271).

That to a considerable extent, poor quality milk resulted from poor economic condition of the dairymen; that there are 180 to 190 evaporating milk plants in the United States.

That the witness was familiar with the history of filled milk, which first made its appearance about 1914 or 1915; that it was produced early in the first World War period, probably to some extent because of the extreme demand for evaporated milk for export purposes; that patents were obtained first by the Carnation Company and they made a product known as Hebe; that the process was extremely profitable (T. 1328) and other companies got into the same business; that in addition to filled milk they had filled ice cream and filled cheese, until the spread of it became a matter of concern to the dairy farmers and to nutritionists and in 1922-1923 nutritionists such as Dr. McCollum of Johns Hopkins and Professor Hart of Wisconsin assisted in the sponsoring of legislation designed to control or abolish their manufacture; that the matter was brought to the attention of Congress, and after lengthy hearings, anti-filled milk legislation was passed, prohibiting the shipment in interstate commerce of dairy products from which butterfat had been removed and replaced by vegetable fats; that various companies engaged in its production and after a final Supreme Court decision upheld the law, they discontinued its manufacture.

That about 1930, the Litchfield Company began its manufacture and has continued; that many states passed legislation, controlling or forbidding its manufacture or sale and there have been a great many court cases; that the patent on the process had expired within the last two or three years (T. 1329).

That if the product could lawfully be sold, practically all of the evaporated milk plants could make it, because the machinery could be used or readily adopted; that if

they all made it, it would be a tragic thing and would be the most serious blow the dairy industry ever had to face, because of the enormous amounts of butter which would be liberated and thrown on the market, and because of the loss of sales of evaporated milk (T. 1330).

The witness testified that the cost to the manufacturer of a can of 'Milnot' is substantially less than the cost of a can of evaporated milk (T. 1331), because the butterfat is replaced by cottonseed oil, which has a much lower market price; that the cost of the skim milk in Milnot would be the same as the cost of the skim milk in evaporated milk; that taking counsel's figure of sixty cents a case for the skim milk in Milnot, there would be a cent and a quarters worth of skim milk in a can; that the value of the whole milk in a can of evaporated milk would be a little over four cents.

The witness testified that if Carolene Products Company produced 6,000,000 pounds of butter in 1940, and 100 other evaporated milk concerns did the same thing, the amount of butter forced on the market would be a terrific amount and would have very serious effects on the price received by dairy farmers; that it would take a much less number of cows to produce the milk necessary to meet the demand, and the manufacture and sale of filled milk in a state would have a very disastrous effect on its dairy economy and on the maintenance of a good milk supply.

That a highly competitive situation exists in the area from which the milk supply of the Litchfield Creamery Company is drawn and the witness thinks that the prices paid by the evaporated milk plants equal and are comparable with the Litchfield Creamery Company's prices; that the question of prices paid by the latter is rather incon-

clusive because the prices quoted are on 3.5 milk (T. 1333) and most of the milk produced in the area exceeds that and the question of the differential paid above the 3.5 milk is a little confusing; that the witness was not informed as to the differential in use by the Litchfield Company; that one of their competitors, Pet Milk Company, used a direct ratio that the Litchfield Company did not; that assuming the Litchfield Company paid \$2 a hundred for 3.5 milk, for 4% milk they would pay \$2.20, which would be 10c lower than their competitor, but he did not know what their differential was (T. 1334). That the testimony of Mr. Hauser showing that the Litchfield Creamery Company paid somewhat above the average price would not mean very much on milk which tested in excess of 3.5 percent butterfat, that in certain other areas, as in Wisconsin, where they made a particular type of cheese, they paid a little more for the milk than the evaporated plants paid.

Cross Examination.

On cross examination the witness testified that in St. Louis a considerable part of the milk was sold off the wagons and the milk sold at the doorstep in quart bottles was 14 and 15 cents; that a good deal was sold in two quart bottles or gallon containers at a still lower price per quart; that in St. Louis not over 50% is delivered off the wagons (T. 1336); that evaporated milk was a competitor of fluid milk and the more of it that was sold the less fluid milk would be sold; that skim milk was used by bakers and candy makers and was exported to Britain; that it was not a competitor of fluid milk because not in general use by consumers; that if bakers and ice cream

manufacturers did not have skim milk, they would probably use fluid milk (T. 1337); and very little skim milk was used by individual consumers (T. 1338).

That since 1920 there has been a great increase in the production of dried milk and to a certain extent the industry recognized that methods of processing and putting it into the channels of trade were to a certain extent necessary in the interest of the dairy farmer (T. 1339).

That he did not disagree with the statements in "Milk Drying under War Conditions," an article in Chemical and Engineering News, quoting the statement of a vice-president of the Borden Company that dry milk had a greater future than any other dairy product, and quoting another Borden executive who said "There isn't anything you can use to take the place of those things which the cow puts into the skim milk solids. Is it economic from a national standpoint, from an agricultural standpoint, that we shall save that butterfat and throw away those skim milk solids? It isn't. It's a movement that is on and it is just as inevitable as that airplanes are developing and that automobiles have driven the buggy off the streets. It is just equally inevitable that skim milk solids are going to find their place in the human diet. Therefore there's no use of bucking."

That he did not think there were any particular amounts of milk solids not fat that were being wasted (T. 1340); that he did not agree with the statement in the above article that skim milk was about 92% wasted when fed to hogs and 98% wasted when fed to poultry; that a considerable amount of skim milk was used in the making of plastics and fabrics, its use was increasing, and he did

not disapprove of it (T. 1341); that when filled milk was manufactured he had no assurance that farmers would receive more for the skim milk, and as the national income of dairy farmers was appreciably decreased the consumer would suffer because of inability of the dairy industry to buy the products of industry and commerce (T. 1342).

That it would be a good thing if skim milk could all be put in the channels of commerce and the underprivileged, who otherwise would not be consuming any milk, supplied with a product within their financial ability to purchase, but he did not believe it could be done other than through improvement in the present methods of distribution of fluid milk.

That he estimated the evaporator paid \$2 a hundred for 3.5 milk; that there were 46 1/2 quarts of milk in a hundred pounds and, at 15c that would be \$6.45, but you did not sell it all for 15c a quart; that at 10c a quart, it would be \$4.65.

That he believed that a sound national economy required that foods of all sorts be furnished the consumer in such quantities to, as nearly as possible, provide the most people with essential food factors to avoid undernutrition.

Re-Direct Examination.

On redirect examination the witness stated that market conditions had something to do with whether the supply of skim milk was adequate (T. 1344), and that the man who sold cream and fed skim milk to animals made his choice in most cases on whether he could get a greater return from his milk sold as cream and as pork or whether

he could get a greater return by selling whole milk to a cheese factory or evaporated milk plant or milk distributor; that he thought Milnot, if it would be in competition with any form of milk, would be in competition with canned milk; that if canned milk was selling for a cent more than Milnot it would not substantially help economic conditions to manufacture the latter (T. 1345); that he did not think a housewife was getting a good buy if she paid the same for Milnot as for evaporated milk, because he did not believe the vegetable oil could compare with milk fat; that from the standpoint of the cost of the material going into the product, one was worth in excess of 4c and the other about 1c.

Re-Cross Examination.

On recross examination the witness testified that the difference in the cost of the two products was a difference in the cost of the fats (T. 1346); that if skim milk was 60c a hundred, the evaporator would be paying \$1.40 for the butterfat, for 3 1/2 pounds of butterfat (T. 1347); that the quotation for butterfat and sour cream was 35c (T. 1348); that you would get about four pounds of butter that would sell at about 35c.

That he did not know the cost of cottonseed oil and could not arrive at the difference in the cost of the two products (T. 1349); that he was quite sure the process must be a profitable one or they would not stay in business; that the difference in cost would be in the cost of the butterfat on the one hand and the cost of the cottonseed oil and vitamins on the other (T. 1350).

HARRY DODGE.

(T. 1545-1585.)

Direct Examination.

Harry Dodge, State Dairy Commissioner of Kansas for eight years, testified that he had formerly been the operator of a dairy, and was a graduate of Kansas State College, majoring in dairy science; that after graduating he was in charge of the herd at the experiment station, then was in the ice cream and milk business for 7 or 8 years at Salina, then was with the college as dairy extension specialist (T. 1545); that he was manager of the Co-operative Milk Plant for a year and a half.

Plaintiff's Exhibit KK (T. 1547), entitled "Data Regarding The Dairy Industry in Kansas," was offered in evidence. The witness stated that it gave a picture of the dairy industry, and the size of it, showing such data as the number of farms in Kansas devoted to the dairy industry.

That as Dairy Commissioner his duty was connected with the administration of the dairy law, and through their deputies they inspected cream stations and places where milk was handled and sold and had general supervision of the dairy industry; that they carried on educational work, and the laws of the state required certain standards of sanitation and quality and they had supervision of those lands (T. 1548); that in addition the cities had their own standards which were as a rule more strict, that a number of them had adopted the uniform ordinance proposed by the United States Public Health Service (T. 1549).

That the quality of milk in Kansas was affected by the economic condition of the dairymen and when the price

was low they could not get the farmers to fix up their places and equipment so as to produce a good article; that during the depression the Government fixed the price of milk so that the producer could get a good price and deliver a sanitary product; that the type of food fed to the cow affected the quality of the milk and if the dairy farmer was not in a sound economic condition he could not feed the animal properly (T. 1550).

The witness testified that the sale of filled milk would tend to destroy a profitable market for the dairy farmer; that filled milk would replace evaporated milk and would tend to throw more butter on the market, lowering its price, and as butter was the basis for all dairy prices, it would be very detrimental to the dairy business (T. 1552); that in his opinion it was advisable, in order to maintain a more sanitary and better quality milk, to prevent the sale of filled milk (T. 1553).

Cross Examination.

On cross examination the witness testified that the consumption of evaporated milk had increased recently because the Government was buying it, and the curve had been going up for 10 years but evaporated milk people told him that where Milnot was turned loose there was a decided decrease in their business (T. 1557).

That Kansas was not a large producer of evaporated milk, although they produced some, and they possibly produced skim milk in Kansas and sold it outside of the state; that dried skim milk did not take the place of anything else and he did not know that the increase in its price would affect the production of butter (T. 1558).

The witness testified that there was about 5,000,000 pounds of dried and powdered milk, and about 35,000,000

pounds of evaporated milk produced during the last year; that the document "Some Facts about Evaporated Milk and Other Dairy Products," showed that in 1939 1.8 percent of the milk in Kansas was used in the production of evaporated milk, but there had been a large increase since then and they estimated 75,000,000 pounds were used (T. 1567), but he could not tell whether or not the percentage was the same (T. 1568); that three plants in Kansas produced evaporated milk.

That he did not object to the product because it was in competition with evaporated milk, but because vegetable oil replaced the butterfat and there was a health angle to it and it would eventually wreck the dairy industry (T. 1571); that about 53% of the milk in Kansas went into butter manufacture (T. 1572); that skim milk was just an outlet for the dairy product and did not affect the industry any (T. 1573).

That he thought the food business had to be regulated and they had to look at the health angle and the economic angle as it affected the health problem (T. 1574).

That he expected there was a great under-consumption of milk in Kansas and in the entire country and they could use more dairy products to advantage (T. 1575).

That in Kansas they had a law prohibiting or putting a tax on the sale of oleomargarine containing coconut oil but the law did not come under his jurisdiction; that he did not know whether that law did not tax oleomargarine made of soybean or cottonseed oil (T. 1576).

That he had had no communications from the State Board of Health of Kansas on the subject of the product and its effect on public health.

He supposed it was possibly true that many people in the lower price brackets could not afford to buy whole milk at the price for which it was now selling (T. 1578); that such people were bound to resort to a less expensive milk and they could buy evaporated milk and have a health factor which they did not get with Milnot (T. 1579).

The witness stated that he had heard of S. M. A., Similac and Olac but knew very little about them; that they had never had a complaint on them (T. 1580).

The witness testified that they had had lots of complaint on the sale of Milnot and, though he did not know what the people were doing who wrote the letters, some of them were possibly in the dairy business; that the letters complained that it was illegal to sell such a product (T. 1582); that the complaints came from lots of merchants because one was abiding by the law and another was selling it.

That he couldn't answer definitely whether they had had any complaints from consumers or doctors or pediatricians, but he did not recall any (T. 1583); that people from a state where Milnot was sold had told him it was very damaging to the sale of evaporated milk but he had made no personal investigation (T. 1584).

J. C. MOHLER.

(T. 1585-1591.)

Direct Examination.

J. C. Mohler, secretary of the Kansas State Board of Agriculture, stated that he had been connected with the Board since 1892, and as Secretary he was executive officer (T. 1585); that the Department had published in-

formation regarding the agricultural industry of the state and since 1872 there had been a constant improvement in the quality of livestock and livestock products (T. 1587); that it was necessary to maintain a sound dairy industry, from an economic standpoint, to produce a high quality milk.

That cottonseed oil cake was one of the most important feed stuffs in Kansas (T. 1588).

Cross Examination.

On cross examination the witness testified that there was a little cotton down in the southern part of Kansas; that it would be a disadvantage to prohibit the sale of cottonseed meal and cake in Kansas, and although they would raise something to take the place of it, it would not be as economical; that they produced soybeans in the state and in a general way soybean meal served the same purpose as cottonseed meal, but he thought there was some difference in its feeding value (T. 1590).

W. E. GRIMES.

(T. 1591-1593.)

Direct Examination.

W. E. Grimes of Manhattan, Kansas, professor of Economics (T. 1591), and head of the Department of Economics and Sociology in the Kansas School of Economics and Applied Science, testified that he was a graduate of Kansas State College, had done graduate work at Cornell University and the University of Wisconsin, and held a Doctor's Degree in Economics from the University of Wisconsin; that since graduation he had been with the Kansas State College except for a short time with the Federal Government and a year at the University of Chicago.

The witness stated their Department was concerned with agricultural economics, the conditions of production of farm products, consumption, prices, marketing and related factors; that in their study they had found that the dairy industry in Kansas, as well as throughout the United States, was one of the major enterprises, the income in Kansas from dairying being 15% to 20% of the total farm income (T. 1592), and it was probably of greater importance than the percentage would indicate because it was distributed throughout the year and took care of the family living expenses.

That an increase in quantity of dairy products usually results in a lower price to the dairy farmer (T. 1593), and if the prices of dairy products went down there was a tendency to shift to other products, for the entire agricultural industry was competitive.

The witness testified that the effect on the dairy industry in Kansas, if evaporated milk producers engaged in the sale of filled milk, would be to displace a part of the butterfat (T. 1594), and lower the price of dairy products; that as the income of the dairy farmers went down, there would be a tendency for them to leave the dairy industry, thus affecting the economic well-being of all who were engaged in agriculture and it in turn probably would result in fewer people in agriculture; that that would affect the ability of the dairy farmer to produce milk to meet the demands of the people, and the effect on the dairy producers would probably reduce the number of them and would reduce the importance of agriculture (T. 1595); that any decline in the relative importance of the farm population tends to cause a decline in the birth rate in the nation as a whole, because the birth rate in the cit-

ies was lower than in rural districts (T. 1596); that the data from the Report of the Land Planning Committee of the National Resources Planning Board, indicates the importance of a prosperous agricultural population if the population of the nation is to be maintained; that if agriculture is not prosperous the time will be near when we will have a stationary population and perhaps a declining population (T. 1597).

DEFENDANTS' REBUTTAL EVIDENCE.

JOHN F. MOLONEY.

(T. 1636-1709.)

Direct Examination.

John F. Moloney, economist with the National Cottonseed Products Association, testified that he had familiarized himself with the testimony of Messrs. Tiedeman, Grimes and Dodge, and that he was more confirmed in his opinion that there was a lack of any rational economic basis which would support the law in question as an enactment in the public interest (T. 1689); that it is a rather loose statement to say that the entire milk price structure is based on the price of butter, for although it is an important factor it is not the only factor; that assuming butter to be the basis of all dairy prices, it would not be a sound pricing system because any pricing system based exclusively on about 4% of the constituents of a commodity is out of balance.

That possibly the system grew up because butterfat was one of the first things they were able to measure in milk and was one of the first things to be recognized as of nutritional value; that with the developing knowledge of

the constituents of milk other than butterfat (T. 1690) the pricing system is somewhat out of date.

That the production of products such as Milnot and Carlene would perhaps release some butter onto the market but the quantity would not be of great significance; and if all evaporated milk were replaced by such products the amount of butter put on the market would be no greater than the average annual normal fluctuation of the quantity of butter produced (T. 1691).

That assuming the manufacture of such a product would depress the price of butter, that would not necessarily mean a decrease in the farmers' net income for it might very well be that the decline in the butter market would be off-set by increased sales to manufacturers of this type of product, and generally the price for milk sold at evaporated plants is somewhat higher than the price for milk sold for the manufacture of butter; that the reason for the general prevailing difference in price was that the butter manufacturer made little use of the skim milk while the manufacturer of the product in question would make use of the skim milk and pay a higher price for the milk (T. 1692); that assuming the price of butter would be depressed, as some of the witnesses stated it would be, he did not think that would be an evil because the entire economic system was based on competition without regard to the effect on an individual's income, and the income of some other group would be increased for consumers would have more to spend on some other product (T. 1693); that individual jobs were not created to give a certain income but existed only because service could be rendered which was of value (T. 1694).

Cross Examination.

On cross examination the witness testified that if the product was a significant competitor of evaporated milk it would have to sell at a lower price because most people were better acquainted with evaporated milk and would therefore prefer it (T. 1700); that the fact that a better way of pricing milk had never been found did not mean that such a system did not exist (T. 1701).

C.

Effect of Law on Interstate Commerce.

DEFENDANTS' EVIDENCE.

JOHN F. MOLONEY.

(T. 197-230.)

Direct Examination.

John F. Moloney, economist with the National Cottonseed Products Association, testified on the question of the effect of the statute on interstate commerce that a trade barrier was generally referred to as a state law limiting the movement into the state of products produced outside the state.

That the effect of trade barriers would be to reduce the volume of business, followed with a reduction in national income (T. 206); that when one state had a trade barrier against a product produced in another state the tendency would be to reduce the income from the product in the discriminated state and reduce the purchases of that state from the state that erected the barrier; that trade barriers reduced the volume of commerce between the states, both as to the product involved and other products; and a number of retaliatory laws had been enacted be-

cause of trade barrier legislation (T. 208); that the trade barrier laws he was most familiar with were the oleomargarine-tax laws which had the effect of actually prohibiting the sale of cottonseed oil in the form of oleomargarine, and there was also legislation in regard to motor carriers, and a number of states had laws providing that no egg was fresh unless raised in the state.

That the Interdepartmental Committee on Trade Barriers was a federal committee composed of representatives of a number of the federal departments, such as Agriculture, Commerce, Justice, and the Tariff Commission, which had been set up to study and make recommendations with regard to the various trade barriers (T. 209); that it was solely an advisory body which made a study of the various state laws and federal laws which acted as trade barriers, and recommended their removal in order to facilitate the greater flow of commerce.

That the Council of State Governments had also done a good deal of work along that line, and most of the states were members (T. 210).

Cross Examination.

On cross examination the witness stated that a law preventing the shipment into a state of fruit which had certain diseases would be entirely valid and not a trade barrier (T. 215), and the same would be true of a law preventing shipment into the state of cattle which had not been quarantined and steps had not been taken to prevent ticks; that a trade barrier was a law restricting the movement of goods into the state without some valid reason such as public health; that it actually protected the people from competition from products produced outside the state (T. 216).

That he believed any product could be labeled and identified so that the consumer would know what he was getting and he felt requirements could be established so that a product could be recognized; that the effect of a product on the public health should be the first consideration in determining whether the product could be sold (T. 218); that the question of trade barriers seemed to be one of the few things that economists did agree on and they all agreed that there should be as little interference by such laws as possible (T. 220).

EARL S. HAINES.

(T. 280-308.)

Direct Examination.

Earl S. Haines, of Atlanta, Georgia, executive secretary of the Institute of Shortening Manufacturers, Inc. (T. 280), stated that he had been with that association thirteen years, and prior to that time had been an examiner at the Federal Trade Commission and in the United States Department of Agriculture; that while with them he participated in several economic inquiries in the marketing methods of foods and other products, one of them being an inquiry into the livestock and meat packing industry, and the other concerning perishable foods and vegetables, and some phases of the butter industry (T. 281); that he also participated in a broad national study of the functioning of the farm cooperatives; that for three years he was with the Packers and Stockyards Administration (T. 282).

That his work with the Federal Government fell within the field of economics, and he was on the staff of the Economics Division of the Federal Works (T. 283).

That he had studied trade barrier legislation and had kept up with most of the literature on it, and had collaborated with the Inter-Departmental Committee on Trade Barriers of the Federal Government and had conferred with Mr. Truitt in Washington (T. 284).

That a trade barrier was a legislative enactment in the character of a tariff imposing a duty on the products of other states to protect the product of the state enacting the law.

That as an economist, he considered retaliatory interstate trade barrier laws injurious to the economic welfare of the nation, and generally they were more injurious than helpful to the state which maintained them; that for example the Wisconsin margarine tax law cut out cottonseed oil margarine from the state, but that had resulted in considerable individual boycotting of Wisconsin products.

That the effect of an interstate trade barrier would be to limit markets and it would affect agriculture and the market for agricultural products (T. 287); that consumers would be hurt because of the restricted availability of products which should be available on the general market, particularly where those restrictions affected foods which only the lower income classes could buy (T. 288).

DEFENDANTS' REBUTTAL EVIDENCE.

JOHN F. MOLONEY.

(T. 1686-1709.)

Direct Examination.

John F. Moloney, economist with the National Cottonseed Products Association, stated that the Kansas law

under which it was sought to prohibit the sale of the product was, as interpreted by the State authorities, an interstate trade barrier (T. 1686); that there were constant developments in the field of trade barriers and since he had testified previously in this case, there had been a conference in Washington known as the Federal State Conference on War Restrictions, attended by many state and federal officials; that the conference was called with a view to eliminating some of the restrictions now in existence which were interfering with the war effort, and it was his understanding that laws similar to the one in question were listed as trade barrier laws; that the oleomargarine laws were so listed (T. 1688).

That Mr. Paul T. Truitt was chairman of the Interdepartmental Committee on Interstate Trade Barriers of the Federal Government, and was also Chief of the Marketing Laws Unit of the United States Department of Commerce; that he recently made a speech before the annual meeting of the National Cottonseed Products Association.

Defendants' Exhibit 170 (T. 1696), an abstract of Paul T. Truitt's speech before the National Cottonseed Products Association, was introduced in evidence. In that speech Mr. Truitt stated that trade barriers now had a new meaning because they meant interference with the war effort and they cut down the striking power with which the nation could wage war, for they forced wasteful utilization of goods, of productive facilities, and of manpower; that where they raised the price of goods they caused malnutrition for the worker (T. 1697) and that resulted in less of production.

That the administration was giving every encouragement to increased domestic production of fats and oils but

it was reasonably certain that the total supply of fats and oils in 1943 would be reduced to less than normal inventories; that trade barriers restricting the production of fats and oils, such as those against margarine, meant a relative wasteful and less valuable use of a scarce commodity (T. 1698); that the need for a good substitute for butter was greater now than ever before and if foods necessary for proper nutrition are available at reasonable prices workers are much more likely to purchase them (T. 1699).

VIII.

Defendants' Request for Findings of Fact and Conclusions of Law.

Both parties having rested the taking of testimony was closed and the case submitted to the Commissioner on oral arguments and written briefs.

Thereafter, on leave of court, supplemental answers were filed by each of the defendants (A. 53-56):

Requests for findings of fact and conclusions of law were then submitted to the Commissioner by both parties.

Defendants' requested findings of fact and conclusions of law are as follows, caption and signatures omitted:

DEFENDANTS' REQUEST FOR FINDINGS OF FACT AND CONCLUSIONS OF LAW.

Come now the defendants, and request the Commissioner to make the following Findings of Fact and declare the following Conclusions of Law, to-wit:

FINDINGS OF FACT.

I.

J. S. Parker is the duly-elected, qualified and acting Attorney General of the State of Kansas, and brings this action on behalf of plaintiff, for and on behalf of the State of Kansas (Defendants' Brief p. 15).

II.

The Sage Stores Company is a corporation organized under the laws of Kansas, doing business in the State of Kansas, with its principal place of business at Topeka, Kansas; is engaged in the general mercantile, produce and retail grocery business, and as such, at the time of the filing of the petition in this case, was keeping for sale, and had in its possession with intent to sell, and was selling, the product involved, manufactured for and distributed by the Carolene Products Company, known as Milnot and Carolene (Defendants' Brief p. 16).

III.

Carolene Products Company is a Michigan corporation organized for the purpose of engaging in the distribution and sale of the food product hereinafter described, known as Milnot and Carolene (Defendants' Brief p. 16).

IV.

Carolene and Milnot, the product sold by the defendants in Kansas are identical except for trade names (Defendants' Brief p. 16).

V.

The defendant Carolene Products Company has not shipped into the State of Kansas or sold in the State of Kansas any product containing coconut oil or bearing the label criticized by this Court since the final decision and judgment of this Court in the case of *Carolene Products Company v. J. C. Mohler et al.*,^a Number 34307. Neither at the time of the institution of this suit nor at any time thereafter has the defendant The Sage Stores Company

possessed or sold any of the product containing coconut oil heretofore manufactured by Carolene Products Company; and neither has said defendant The Sage Stores Company sold any of the product of the defendant Carolene Products Company bearing the label criticized by this Court since the final decision and judgment of this Court in the case of *Carolene Products Company v. J. C. Mohler et al.*, No. 34307 (Defendants' Brief p. 16).

VI.

The sole ingredients of defendants' said product are sweet skim milk, partially hydrogenated refined cottonseed oil and natural vitamin concentrates; that there is no other ingredient in defendants' product except the foregoing; that defendants' product is manufactured in the modern, sanitary creameries of the Litchfield Creamery Company of Litchfield, Illinois, and at Warsaw, Indiana; that defendants' product is manufactured by mixing (a) sweet skim milk, (b) refined cottonseed oil and (c) natural vitamin A and vitamin D concentrates, and thereafter evaporated at the Litchfield Creamery Company with sanitary equipment in the same manner as sweet, whole or skim milk is evaporated in the manufacture of evaporated milk; that after evaporation, at the end of which the volume of the mixture is reduced to 40 per cent of the original volume solely from loss of water, the product is put up in hermetically sealed cans by modern and sanitary canning machinery; that after the canning, the cans and the product therein are thoroughly sterilized under steam pressure at 240° F. in the same manner as canned evaporated whole milk is sterilized; that defendants' product is rendered thereby absolutely free of all bacteria and so remains thereafter (Defendants' Brief p. 17).

VII.

Each 14 1/2 ounce can of defendants' product contains 2,000 U. S. P. units of Vitamin A and 400 U. S. P. units of Vitamin D (Defendants' Brief p. 17).

VIII.

The fat soluble vitamins A and D, introduced in defendants' product are secured from nationally known, reputable laboratories which have extracted these vitamins from prime natural sources such as fish livers and prepared these concentrates of readily available vitamins for use in human food and for medical purposes (Defendants' Brief p. 17).

IX.

The defendants' product is a compound containing approximately the following chemical constituents:

Fat	Approximately	6.00%
Protein	"	7.75%
Carbohydrates	"	10.75%
Mineral Salts	"	1.65%
Water	"	73.85%

(Defendants' Brief pp. 17-18.)

X.

The uniform labels used on defendants' products (Defendants' Brief pp. 19-20) are as follows:

(The labels appear at page 17 of the Abstract.)

XI.

Milnot and Carolene is a compound, manufactured and compounded from the following natural substances in their natural states: (a) skim milk, (b) refined cottonseed oil.

and (c) natural concentrates of Vitamins A and D; that in the compounding of these natural products no other substance is added (Defendants' Brief p. 21).

XII.

All persons handling and dealing in said product, from the manufacturer to the retailer, carefully compound, sell and handle this product in hermetically sealed tins bearing labels as heretofore exhibited (Defendants' Brief p. 21).

XIII.

Skimmed milk is a wholesome and nutritious and harmless food (Defendants' Brief p. 23).

XIV.

Cottonseed oil is a wholesome, nutritious and harmless food (Defendants' Brief p. 24).

XV.

The fortification of foods with vitamins A and D in fish liver oils is recognized as wholesome, nutritious and harmless and beneficial (Defendants' Brief p. 25).

XVI.

The product, a combination of skimmed milk, cottonseed oil, and Vitamins A and D is wholesome, nutritious and harmless (Defendants' Brief p. 27).

XVII.

The product is and has been generally accepted as a wholesome and nutritious food product by the consuming public without any history of injury through its use (Defendants' Brief p. 28).

XVIII.

Defendants' product may be successfully used in the diet of infants (Defendants' Brief p. 30).

XIX.

The authorities on human nutrition hold that defendants' product is wholesome, nutritious, harmless and useful when used as a food in feeding of humans, including adults, children and infants. There is no substantial difference of opinion on this point (Defendants' Brief p. 34).

XX.

Defendants' product is honestly labeled and fairly sold on its merits as a distinct food compound (Defendants' Brief p. 68).

XXI.

Nothing is added to defendants' product to give it an artificial taste or color, or to give it a resemblance to any other food or food product (Defendants' Brief p. 68).

XXII.

Unwholesome or vitamin deficient products may be detected easily by inexpensive and recognized methods of analysis and distinguished from defendants' product (Defendants' Brief p. 70).

XXIII.

The manufacture and sale of defendants' product is a benefit to the consuming public (Defendants' Brief p. 70).

XXIV.

The manufacture and sale of defendants' product is an economic benefit to the producers of milk and cottonseed oil (Defendants' Brief p. 71).

XXV.

The statute invoked is an Interstate Trade Barrier as applied to defendants' product (Defendants' Brief p. 73).

CONCLUSIONS OF LAW.

I.

The sale of the product is not forbidden by Sub-section (F) (2) of Section 65-707, G. S. Kan., 1935 (Defendants' Brief p. 82).

II.

The prohibition of the sale of defendants' product under Sub-section (F) (2) of Section 65-707, G. S. Kan., 1935, is unconstitutional in that such prohibition violates Section 17 of Article II, and Section 1 of the Bill of Rights of the Constitution of the State of Kansas, and the Fourteenth Amendment to the Constitution of the United States (Defendants' Brief p. 109).

III.

The relief prayed for in the petition by the plaintiff herein should be denied and the defendants should be given judgment against the plaintiff for costs.

IX.

Commissioner's Report.

Thereafter, on the 15th day of December, 1942, the Commissioner filed his written report, which is as follows, caption and signature omitted:

FINDINGS OF FACT AND CONCLUSIONS OF LAW.

(The first 11 Findings are taken and adopted from the "Stipulation of Undisputed Facts.")

(Unless otherwise indicated, references to the defendant mean defendant Carolene Products Company.)

(1) That J. S. Parker is the duly elected, qualified and acting Attorney General of the State of Kansas, and brings this action on behalf of plaintiff, for and on behalf of the State of Kansas.

(2) The Sage Stores Company is a corporation organized under the laws of Kansas, doing business in the State of Kansas, with its principal place of business at Topeka, Kansas; that it is engaged in the general mercantile, produce and retail grocery business and that as such, at the time of the filing of said petition in this case, was keeping for sale, and having in its possession with intent to sell and was selling the product hereinafter described, manufactured for and distributed by the Carolene Products Company, known as Milnot and Carolene.

(3) That Carolene Products Company is a Michigan corporation organized for the purpose of engaging in the distribution and sale of the food product hereinafter described, known as Milnot and Carolene.

(4) That Carolene and Milnot, the only products sold by this defendant in Kansas, are identical except for trade names; that Carolene and Milnot will be referred to hereinafter as defendant's product.

(5) That defendant Carolene Products Company has not shipped into the State of Kansas or sold in the State of Kansas any product containing coconut oil or bearing the label criticized by this Court since the final decision and judgment of this Court in the case of *Carolene Products Company v. J. C. Mohler et al.*, Number 34307. That neither at the time of the institution of this suit,

nor at any time thereafter has the defendant The Sage Stores Company possessed or sold any of the product containing coconut oil heretofore manufactured by Carolene Products Company; and neither has said defendant The Sage Stores Company sold any of the product of the defendant Carolene Products Company bearing the label criticized by this Court since the final decision and judgment of this Court in the case of *Carolene Products Company v. J. C. Mohler et al.*, No. 34307.

(6) That the sole ingredients of defendant's said product are sweet skim milk, refined cottonseed oil and natural vitamin concentrates; that there is no other ingredient in defendant's product except the foregoing; that defendant's product is manufactured in the modern, sanitary creameries of the Litchfield Creamery Company at Litchfield, Illinois, and at Warsaw, Indiana; that defendant's product is manufactured by mixing (a) sweet skim milk, (b) refined cottonseed oil and (c) natural vitamin A and vitamin D concentrates, and thereafter evaporated at the Litchfield Creamery Company with sanitary equipment in the same manner as sweet, whole or skim milk is evaporated in the manufacture of evaporated milk; that after evaporation, at the end of which the volume of the mixture is reduced to 40 per cent of the original volume solely from loss of water, the product is put up in hermetically sealed cans by modern and sanitary canning machinery; that after the canning, the cans and the product therein are thoroughly sterilized under steam pressure at 240° F. in the same manner as canned evaporated whole milk is sterilized; that defendant's product is rendered thereby absolutely free of all bacteria and so remains thereafter.

(7) That each 14 1/2 ounce can of defendant's product contains 2,000 U. S. P. units of vitamin A and 400 U. S. P. units of vitamin D.

(8) That the fat soluble vitamins A and D introduced in defendant's product are secured from nationally known, reputable laboratories which have extracted these vitamins from prime natural sources such as fish livers and prepared these concentrates of readily available vitamins for use in human food and for medical purposes.

(9) The defendant's product is a compound containing approximately the following chemical constituents:

Fat	Approximately	6.00
Protein	"	7.75
Carbohydrates	"	10.75
Mineral Salts	"	1.65
Water	"	73.85

(10) That the uniform label used on defendant's product is as follows:

(The labels appear at page 17 of the Abstract.)

(11) That Milnot and Carolene is a compound, manufactured and compounded from the following natural substances in their natural states: (a) skim milk, (b) refined cottonseed oil, and (c) natural concentrates of vitamins A and D; that in the compounding of these natural products no other substance is added.

That all persons handling and dealing in said product, from the manufacturer to the retailer, carefully compound, sell and handle this product in hermetically sealed tins bearing labels as heretofore exhibited.

(12) As the name implies, cottonseed oil is a product of the cotton seed. The oil is extracted from the seed by a

crushing and pressing process. The crude cottonseed oil so obtained is refined with caustic soda, after which, it is bleached, usually with Fuller's Earth, and put through a process of destearinization (removal of the natural stearins). It is then hydrogenated (the addition of hydrogen to the unsaturated portion of the fat) and deodorized, resulting in a colorless, tasteless product, called "hydrogenated cottonseed oil." It is this hydrogenated cottonseed oil which is used in the manufacture of defendant's product.

Hydrogenated cottonseed oil is used extensively for edible purposes, such as in shortening, oleomargarine and salad oils and dressings.

In a bulletin published by the Nutrition Service of the Child Hygiene Division of the Kansas State Board of Health, it is stated:

"Margarine, lard, salt pork, bacon squares and vegetable fats and oils are all suitable fats to add to the diet. Some of the margarines have been reinforced with added vitamins.

Cottonseed oil is a wholesome, nutritious and harmless food, and there is no history of injury resulting from the use of cottonseed oil as a food for human consumption.

(13) The statutory definition of skimmed milk is "such milk as has had all or a portion of the butter fat removed."

According to reports published by the United States Department of Agriculture in 1939, "almost fifty billion pounds of skim milk are fed to animals or destroyed every year," and "only about 12 per cent of all the skim milk produced in the United States during the five-year period 1930-34 was used in the manufacture of dairy products." The experts who have testified in this case and the authorities generally agree that skim milk contains from one-half to two-thirds of the caloric value of whole milk.

In the bulletin published by the Nutrition Service of the Child Hygiene Division of the Kansas State Board of Health, it is stated:

"Skim milk is a food of good value. The lack of cream should be compensated for by using extra butter, cod-liver oil and green, yellow and leafy vegetables. Buttermilk has the same food value as skim milk.

"Powdered skim milk has practically the same food value as fresh skim milk. One pound of milk powder, and a half pound of butter equals in value five quarts of whole milk * * *"

There is wide-spread malnutrition in the United States, including Kansas, and health authorities and nutritionists in general agree that it is desirable and in the interests of public health that more skim milk be used in the human dietary as an addition to our national milk supply instead of being fed to animals, used in the manufacture of plastics or wasted. Practically all of the skim milk available for the purpose, principally in powdered form, is now being sent to Britain for human consumption.

Both dried and condensed skim milk are now in general use by bakers in the manufacture of bread and other bakery products, and it is used extensively in cooking, in the manufacture of ice cream and other dairy products.

Skim milk is a wholesome, nutritious and harmless food, and there is no history of injury resulting from its use as a food for human consumption.

(14) Vitamins are chemical compounds, found in a great variety of food stuffs, which are essential to life and the maintenance of good health. An adequate supply of the essential vitamins can be obtained by consuming a varied diet. The problem of insuring an adequate supply of vitamins has become more difficult in recent years because of modern refining and processing of food products. For example, the public demands white flour,

which can only be obtained by removing the outer layers of wheat and the interior of the wheat kernel, which parts carry practically all of the vitamins found in wheat. It has therefore become a proper and accepted practice to fortify certain types of food, such as flour, margarines, chocolate syrup, chocolate bars and malted milk, by the addition of vitamin concentrates:

(15) Cod liver oil has been used for medicinal purposes for centuries. It was used to cure and prevent rickets as early as the eighteen-eighties. It was not until about 1913, however, that it was discovered that cod liver oil contains two factors now known as Vitamins A and D. It was not then possible to fortify food with cod liver oil because of its objectionable taste and odor. About 1930 it was discovered that halibut liver oil has a much greater potency of Vitamins A and D than cod liver oil, so that a dose of from 1 to 2 percent as much halibut liver oil as cod liver oil contains the same amount of these vitamins. Other species of fish are also excellent sources of Vitamins A and D. Oil is extracted from the livers of such fish, and by a process of refining is made suitable for use in food and pharmaceutical products. By mixing the oil from two or more species, the desired potency of vitamins A and D is obtained.

(16) Vitamins A and D obtained from fish livers in the manner above described are called natural vitamins and are what are used in the fortification of defendant's product. Natural vitamins are equal in nutrition to vitamins supplied through butter fat or other sources, and the fortification of foods with natural vitamins, including Vitamins A and D, is recognized by nutritionists as a proper practice.

The bulletin published by the Nutrition Service of the Child Hygiene Division of the Kansas State Board

of Health referred to above, has this to say about cod-liver oil:

"Cod-liver oil supplies vitamins needed for development of strong bones and teeth. Pregnant and nursing mothers may need this food. Infants, pre-school children, and school children may need it, too. All standard cod-liver oil is marked with the letters, U. S. P., which insures that it contains at least eighty-five units of vitamin D per gram. A teaspoonful makes about three grams. Cod-liver oil is a good source of vitamin A, which may be lacking in the diet unless a large amount of whole milk, eggs, and leafy vegetables are used. Cod-liver oil should be taken as prescribed by the family physician."

There is no history of injury resulting from the fortification of food with natural vitamins.

(17) The word "wholesome," as used in the field of nutrition and in these findings, means a food or nutrient which can be used by the body, is non-toxic and is useful as a food. "Nutritious" means containing food value and "nutritive value" is a term used to indicate the kind and quantity of nutrients contained in a food. The fact that a food is wholesome and nutritious does not mean that it is of itself an adequate or a complete food. A food may be both wholesome and nutritious, and yet be incapable of sustaining human life for a very long period. Disease can be caused by what the diet does not contain, as well as by what it does contain. For example, pellagra, which is rather common in some of the southern states, is caused by long continued partially inadequate diet.

(18) The following is a tabulation of the known vitamins, showing their common name, chemical name, the disease associated with the deficiency of each and for what each is necessary:

TABULATION OF KNOWN VITAMINS

Common name	Chemical name	Disease associated with deficiency of	Necessary for
Fat Soluble Vitamins			
Vitamin A Vitamin A may be converted to Vitamin A	Vitamin A	Ophthalmia night blindness	Normal vision; resistance to infection, normal skin and lining of internal tissue
Vitamin D	Calciferol	Rickets	Normal utilization of calcium and phosphorus, strong bones.
Vitamin E	Alpha-Tocopherol	Sterility, muscular dystrophy	Reproduction, cell division, muscle vigor
Vitamin E in the form of phospholipid is fat-soluble, see below for function.			
Common name	Chemical name	Disease associated with deficiency of	Necessary for
Fat Soluble Vitamins			
Vitamin K	Napthoquinones	Hemorrhagic disease Faulty blood clotting	Normal functioning of liver to allow blood clotting
Water Soluble Vitamins			
Vitamin C	Ascorbic acid	Scurvy	Normal blood vessels, healing of wounds
Vitamin B ₁	Thiamin	Beri-beri, faulty carbohydrate utilization	Normal production of energy from carbohydrates
Vitamin B ₂ , G	Riboflavin	Cheilosis	Normal skin, nerve and eyes
	Nicotinic acid	Pellagra	Normal oxidation in tissues
Vitamin B ₆	Pyridoxine	Dermatitis and anemia	Not definitely known
Vitamin B ₁₂ , Pantoic acid	Calcium pantothenate	Dermatitis	May function in preventing gray hair
	Choline chloride	Fatty liver, hemorrhagic kidney	Normal, phospholipid formation.
	Biotin	Spectacled eye, paralysis	Unknown
	Inositol	Loss of hair	Unknown
	Same	Gray hair	Unknown

not characterized

factor

factor

R and S

factor

growth factor for guinea pigs

M for monkeys

This tabulation also separates the vitamins into the fat soluble and water soluble groups. Upon the separation of cream from milk the fat soluble vitamins go with the cream and the water soluble vitamins remain in the skim milk.

Of the fat soluble vitamins listed in the tabulation, Vitamins A, D and K are undoubtedly essential in human nutrition. The experts are not agreed on Vitamin E, and it is at least doubtful if this vitamin is essential in the diet of infants.

Of the water soluble vitamins shown in the tabulation, Vitamins C, B1, B2 or G, Niacin, B6, Pantothenic Acid, and Choline are important in human nutrition. The function of the remaining water soluble vitamins is still unknown.

(19) All known vitamins are present in whole cow's milk, but neither whole cow's milk nor any other single food is an adequate source of all the vitamins. Whole cow's milk comes closer than any other food to supplying the necessary vitamins for human life. The vitamin content of whole milk varies widely according to the cow, the season and the type of food fed to the cow. The Vitamin A content of ordinary evaporated milk varies from 1,000 to 2,500 units per 14 1/2 ounce can, and the Vitamin D content is about 35 units. The Vitamin K content is small.

(20) Milk is not a perfect food for human beings. It is deficient in iron, copper and manganese, and in Vitamin D. It is more complete than any other food, and cow's milk is the best known substitute for breast milk for the human infant. Pediatricists do not advise its use.

however, as the sole diet of infants without modification or the addition of other substances. In the bulletin "Infant Care" issued by the United States Department of Labor, offered in evidence by the plaintiff, it is advised that cod liver oil be added to the whole milk diet of an artificially fed baby after it is two weeks old.

(21) Approximately four per cent of the milk produced in the United States goes into evaporated milk. The sale of evaporated milk doubled in the fifteen years ending 1938, and since then the percentage of increase has been somewhat larger.

(22) The "Organization of the Evaporated Milk Industry under the Agricultural Adjustment Administration" sends to its members price bulletins showing the prices paid for 3.5% raw milk at evaporated milk plants in the North Central states. The same organization sends to its members a schedule of "minimum prices to be paid for raw milk according to the formula provided in the evaporated milk license made effective by the Secretary of Agriculture June 1, 1935." The formula, in general, provides for a minimum price for milk testing 3.5% butterfat of its combined butter value (average wholesale price 92 score butter at Chicago) and cheese value (average wholesale prevailing price of "Twins" on Wisconsin cheese exchange) plus 30%. Litchfield Creamery Company has consistently paid more than such average price, the percentage by which the price paid by it exceeded the average price fluctuating from year to year from a low of 4.71% at the Warsaw plant in 1938 to a high of 12.72% at the Warsaw plant in 1939. The operations of Litchfield Creamery Company have contributed

substantially to the expansion and prosperity of the dairy industry in the vicinity of its plants.

(23) Litchfield Creamery Company purchases annually from approximately 4,800 farmers and dairymen in the vicinity of its two plants the milk produced by 30,000 cows. In 1940, it paid for the whole milk so purchased \$2,968,483.62. It also purchased a small quantity of skimmed milk for which, in 1940, it paid \$57,078.09. In 1940, it manufactured over 1,100,000 cases of Milnot and 5,368,000 pounds of butter which it sold for \$1,609,121.42. Its daily intake of whole milk in 1940 was 300,000 pounds, as compared to 50,000 pounds in 1934.

(24) The dairy industry is one of the most important in this state. As of April 1, 1940, there were 156,327 farms in Kansas, containing 48,173,635 acres, and of the total value of \$1,421,387,464. Seventy-six per cent of these farms, or 129,213, produced milk in 1939. In 1940, 57.8 per cent or more of the income from 11,545 farms came from dairying, and 8,400,000 acres of farm land were required for dairying. As of January 1, 1942, there were 786,000 cows and heifers two years old and older kept for milk production purposes in the state, and there were 484,548 people living on farms and partly dependent on the income from dairying. In 1941, there were in the state 1,670 cream stations, 268 cream brokerages and 396 creameries, ice cream manufacturers and Pasteurizing plants, 35 cheese factories and 10 condenseries, which employed an estimated 2,500 people. An estimated 6,000 people are engaged in producing and distributing milk; 3,700 are engaged in buying cream and milk for resale. In 1940, Kansas produced 3,030,000,000 pounds of milk of a total value

of \$40,905,000. The butter production in 1940 was 73,806,166 pounds. The 8,400,000 acres of land devoted to dairying and the buildings thereon are worth \$247,800,000; the dairy cows and heifers are worth \$57,378,000; the manufacturing plants represent an investment of \$10,000,000; and the cream stations and brokerages an investment of \$500,000; or a total investment in the dairy industry of \$315,678,000.

(25) The quality of milk and dairy products is directly influenced by the economic condition of the dairy industry for the reason that, when milk cannot be produced and sold profitably, there is a tendency for dairy-men not to keep their equipment in first class condition, and not to feed the dairy cows an adequate supply of the proper food stuffs.

A sound economy for the dairy farmer is therefore essential for the production of an adequate supply of pure, wholesome milk.

(26) Undoubtedly the operations of the Litchfield Creamery Company have been of economic benefit and advantage to the dairy farmers in the vicinity of its two plants. It appears, however, that it is the only concern now engaged in the manufacture of filled milk. The patent on the process used has expired, and there is nothing to prevent other evaporated milk manufacturers from engaging in the business of manufacturing and selling filled milk if such business is legal. The business is a profitable one, and the evaporated milk companies will enter the field if and when filled milk can legally be manufactured and sold. While the operations of Litchfield Creamery Company have tended to increase the income of

the dairy farmers in the vicinity of its two plants, it does not follow that the income of dairymen generally will be increased if the business of manufacturing and selling filled milk is engaged in on a competitive basis and on a nation-wide scale.

Filled milk is made principally from skim milk, that is, milk from which the butter fat has been removed. The butter fat so removed is replaced in filled milk by a vegetable oil, and the butter fat is thrown on the market for sale in some other dairy product such as butter. Since the price of milk is largely governed by the butter market, it necessarily follows that the free and unrestricted manufacture of filled milk would decrease the price paid for whole milk. The sale of filled milk would reduce the demand for evaporated whole milk, which would also exercise a depressing influence on the price paid for whole milk.

(27) A product made of skim milk and coconut oil was sold under the name of "Carolene" as early as 1917. The name "Milnut" was first used in 1934. Shortly after the present product, which contains cottonseed oil instead of coconut oil, was placed on the market, the trade name "Milnut" was changed to "Milnot," but the wholesalers and grocers used up their stocks on hand bearing the "Milnut" label, and defendant's cottonseed-oil product was still being sold under the name "Milnut" in Kansas at the time this suit was filed and was identical with the product now sold under the trade name "Milnot." Defendant's product is now being sold under the trade names "Carolene" and "Milnot" in eighteen states.

After the decision of this court in *Carolene Products Company v. Mohler*, 152 Kan. 2, a new label for use on

the cottonseed oil product was prepared and submitted to the Federal Food and Drug Administration. Such label was revised to meet all objections and suggestions made by the Federal Administrator, and is the label now in use (Finding 10).

(28) Defendant's product is packed in cases containing either 48—14 1/2 ounce cans or 96—6 ounce cans. The cans are the same size and the number of cans per case are the same as are used in packing and shipping evaporated whole milk.

(29) Defendant sells its product in the State of Kansas only to wholesalers through food brokers, who also handle other food products. Defendant makes no shipments to retailers or consumers. The broker obtains an order for defendant's product from a wholesale grocer, and submits it to defendant for acceptance or rejection. If defendant accepts the order, the product is shipped to the wholesaler in unbroken packages by rail or truck from Litchfield, Illinois. Defendant collects from the wholesaler and pays the food broker his commission. The broker has nothing to do with making delivery of the product to the wholesaler. The wholesaler distributes the product in the original packages to the retail grocer, and the latter breaks the packages and sells to the consumer by the can. The wholesalers, on their own initiative, and at their own expense, have advertised the product in Kansas to some extent over the radio, and there has been newspaper advertising of the product in Kansas by both wholesalers and retailers. Defendant has sales agents and representatives who call upon the brokers and wholesalers in Kansas in furtherance of its business.

(30) Since this suit was filed defendant has endeavored to protect the market for its product in the State of Kansas. During said time, the State Board of Agriculture has notified wholesalers and retailers handling defendant's product, both by letter and through its inspectors, that the sale of said product was in violation of the statute. In several instances, the retailers so notified have advised the wholesaler from whom they purchased the product of having received such notice, and the wholesaler or the food broker, or both, brought the matter to the attention of defendant, and it, in a number of instances, has written letters from its principal office in Litchfield, Illinois, to retailers in Kansas, to the effect that the constitutionality of the law is being tested by a case now pending in Kansas, and that it is continuing the sale of its product during the pendency of the litigation, and that it does not feel that there will be any prosecution of retailers for selling the product during the pendency of the litigation, but that "if they should arrest you, or any other retailer, for selling our product, Milnot, we will pay all costs of such litigation, provided you plead not guilty and give us an opportunity to defend you in the case." In instances where prosecutions have been instituted against retailers for selling defendant's product, attorneys employed and paid by defendant have appeared and defended such retailers. Some of the retailers so notified have discontinued the sale of defendant's product, but some have continued to sell it.

(31) During the years 1940 and 1941, a deputy dairy commissioner called on a number of retail grocers in the state for the purpose of investigating the sale of defendant's product. The deputy's method of approach was to

ask a clerk for cheap canned milk. Many of the 28 stores visited which were selling defendant's product displayed it with or near evaporated milk. In some of the stores the clerk first recommended defendant's product, and in several instances the clerk either first recommended some brand of evaporated milk or some brand of evaporated milk and defendant's product. Many of the clerks either informed the deputy of the nature of the product or read to him from the label, but a majority did not disclose the nature of the product.

During the same period, three other deputies made surveys in their territory to see how the product was being displayed. In most instances, it was displayed on shelves with or near evaporated milk.

(32) Most of the housewives who use defendant's product know, at least in a general way, what it is. The evidence indicates, however, that some do not. In a majority of cases, housewives call for the product under its trade name, but some call for it as "Milnot Milk," and some of the retail grocers who testified in this case so referred to it.

(33) Nothing is added to defendant's product to give it an artificial taste or color, or to give it a resemblance to any other food or food product. Since the principal constituent of the product is skim milk, and the refined, hydrogenated cottonseed oil which is added is odorless, tasteless and colorless, the product necessarily closely resembles evaporated whole milk in taste, consistency, odor and appearance. The average consumer could not distinguish between them by taste, smell or appearance.

(34) Various retail grocers have advertised defendant's product in their local newspapers on their own in-

initiative and at their own expense. The following are statements which have appeared in such newspaper advertisements:

"Milnot, So Rich it Whips,

10 Tall Cans - 59c"

"Milk - Milnut, It Whips - Per Can 5c"

"Milnut. Use it Like Evaporated Milk
in Coffee or in Cooking. 3 Tall Cans 19c"

"Milnut, So Rich it Whips, Tall Can 5c"

"Milk - Caroline Brand

4 Tall Cans 23c"

"Milk, Milnut - It Whips

3 cans - 17c"

"Carnation Milk - 3 Tall Cans - 20c

Milnot - 4 Tall Cans - 25c"

"Milnut Milk - Large Cans

4 for 25c"

"Milnut Canned Milk, Large Can 6c"

"Milk - Carolene 4 Lge. Cans 25c;

12 Cans 69c"

There is nothing in the record to indicate that defendant knew of or in any way authorized or encouraged this form of advertising. To the contrary, defendant puts in the cases of its product a "Notice," in which it is stated, among other things, that "It is improper to advertise, represent, display or sell either of these products as milk, or evaporated milk or cream."

(35) At the time the evidence relating thereto was taken, wholesalers in Kansas were paying \$3.10 per case for defendant's product and selling to retailers for \$3.50 per case. At the same time the wholesaler was buying Carnation evaporated milk for \$3.72 per case and selling

to the retailer for \$3.87 per case, and was buying Page's evaporated milk for \$3.57 per case and selling it for \$3.77. The average retail selling price of defendant's product is approximately one cent per can less than that of evaporated whole milk.

(36) Defendant furnishes its food brokers in Kansas with printed receipt books, which the food broker distributes to the retailers. These books contain 60 receipts, in all of which defendant's product is used as an ingredient instead of milk or cream. Some of the titles of the receipts are: Boston Cream Pie, Cream Pie, Strawberry Ice Cream and Creamy Fudge. On the back of the book appears the statement that "Milnot can be used for all culinary purposes wherever you now use whole milk, cream, whipping cream, or a canned milk."

(37) The openings in fat molecules have the ability to absorb oxygen, and such absorption of oxygen forms a compound with a rancid odor. In hydrogenated cottonseed oil these openings in the fat molecules have been closed so that oxygen cannot enter, and hydrogenated cottonseed oil therefore withstands the development of rancidity to a greater degree than butter fat, and hydrogenation has greatly widened the field for the use of cottonseed oil.

(38) Defendant's product is used principally by families in the low income group. It is used as a substitute for milk and cream and has no other use. It has had good customer acceptance. The evidence clearly shows that the housewives who have used it prefer it to evaporated whole milk. Among the reasons given for such preference are that it has a better taste than evaporated milk; that it will whip and so can be used as a substitute for whipping

cream; that it is cheaper and that it will keep longer (as heretofore found, hydrogenated cottonseed oil has a greater resistance to rancidity than butterfat), than evaporated whole milk, which is important to families who lack refrigeration facilities.

(39) A study of the nutritional status of the school children of the state made under the supervision of the State Board of Health indicates that approximately 25 per cent of the school children suffer from malnutrition. The principal deficiency is in food rich in nutrients. The principal reasons for the nutritional deficiency are: lack of adequate income with which to purchase proper foods; lack of information as to what are the proper foods, and lack of interest. The Extension Service of Kansas State College and the Nutrition Service of the State Board of Health are carrying on educational programs for the purpose of teaching housewives the best foods to buy with the amount of money available. The workers for these Services oppose the sale of defendant's product on the ground that it is not an adequate substitute for whole milk, and should not be sold unless the housewives who use it are taught the necessity of using other foods to supply the nutrients present in whole milk but not in defendant's product.

(40) There are several baby foods on the market, such as S. M. A., a concentrated liquid derived from cow's milk, the fat of which is replaced by animal and vegetable fat, including cod liver oil; Olac, a dried mixture of skim milk containing olive oil and halibut liver oil; Sobee, which contains soy bean flour; and Mull-Soy, which also contains soy bean flour. While there is no

law prohibiting the sale of these products by grocers (assuming that they do not come under the statute under consideration), they are ordinarily sold by druggists and are ordinarily fed to babies only on the advice and under the directions of a physician. They are usually sold in powdered form, and do not resemble defendant's product or evaporated milk in packaging, color or consistency. Such preparations are ordinarily fed only to sick babies who cannot tolerate whole cow's milk. Pediatricists usually attempt to get such infants back on a whole milk formula as soon as possible.

(41) All fats, both animal and vegetable, are composed of three elements—hydrogen, oxygen and carbon. The combination of these elements determines the character of the fat.

Practically all natural fats, animal and vegetable, including both butterfat and cottonseed oil, are tri-glycerides (three fatty acids attached to each glycerin molecule). No other fat approaches butter fat in the number and assortment of fatty acids, of which it contains nineteen. Cottonseed oil contains six fatty acids.

(43) Both parties have submitted tables comparing the chemical composition of evaporated milk and defendant's product. — (Plaintiff's appears as Exhibit "LL," page 1848 of the transcript, defendants' commencing on page 56 of their "Statement, Brief and Argument.") Both tables are illustrative, but neither is exactly accurate. The fact is that no complete, accurate analysis of the same sample of milk or butterfat has ever been made. Many different analyses have been made for different purposes from different samples at different times, and the com-

posite of these analyses is not an accurate analysis of the whole by reason of the wide variation in the samples analyzed. Neither has any complete analysis been made of defendant's product. Further, as will hereafter appear, the experts who testified, and the authorities cited, are not in agreement as to the composition of either evaporated whole milk or defendant's product. Under these circumstances, no accurate comparison of the chemical composition of evaporated whole milk and defendant's product is possible.

(44) Phospholipins are not true fats, but are similar to fats, and are necessary in human nutrition. They are utilized in building body tissue, particularly nerve sheaths.

Whole milk contains phospholipins. There is testimony in the record that "most of the phospholins will stay in the skimmed milk." There is equally positive testimony to the effect that "practically all of the phospholipins accompany the butterfat phase. They are removed from the skimmed milk."

(45) Sterols are solid alcohols which are essential in human nutrition. Sterols are found in whole milk, and upon separation of the cream from the milk largely go with the cream. Sterols are also present in cottonseed oil, and are therefore present in defendant's product. There is testimony, however, that plant sterols are not absorbed by the body as readily as animal sterols.

(46) As has been found, Vitamin E is fat soluble. One of the authorities states that "Refined and hydrogenated cottonseed oil are also excellent sources of the vitamin (E). Cottonseed oil is as satisfactory as wheat germ oil for the preparation of concentrates (of Vitamin E)."

To the contrary, another authority states that "The vegetable fats as a rule contain but small quantities of fat soluble Vitamins A, D and E. After refining and deodorization, they are usually devoid of vitamins." One of the witnesses testified that Vitamin E is removed with the cream and would not be replaced in defendant's product by the addition of cottonseed oil.

(47) There is testimony in the record to the effect that the human is capable of manufacturing the fat soluble Vitamin K in the intestinal tract; that it has a water soluble phase as well as the fat soluble phase; that if there is any Vitamin K in whole milk, the quantity is so small as to be immeasurable. On the other hand, there is testimony that milk contains a sufficient amount of Vitamin K to prevent hemorrhagic disease in young infants.

(48) Not all of the vitamins which are necessary in human nutrition have been identified. Numerous attempts have been made to rear various types of animals on diets containing no Vitamins except those which have been identified. All such attempts have failed.

The human being may obtain an adequate supply of these essential but unknown Vitamins by consuming a varied diet of natural food stuffs.

(49) The Babcock test is by statute a standard test in Kansas for the purpose of determining the per cent of butter fat in milk and cream. This test would not show whether the fat in a product such as Milnot was butter fat or a vegetable oil. There are other tests, however, by which a competent food chemist can readily determine whether a fat in a product is butter fat or vegetable oil, and by which they can readily determine whether a vege-

table oil or fat is coconut oil or a hydrogenated oil of other sources. It would not be difficult for a competent food chemist to analyze defendant's product for the purpose of determining whether its constituents are as stated in the label. Carolene Products Company has such assays made from time to time by a competent disinterested chemist, and copies of such reports are made available to any state authorities. Like assays are made by the Federal Food and Drug Administration of foods which move in interstate commerce.

(50) Biochemists have been largely responsible for the developments in the field of nutrition. Their experiments are performed with animals which can be sacrificed. The biochemist feeds his test animals the food or product under consideration and observes and studies the results. A physician concerned with the health of his patient, and interested in the patient's recovery, obviously cannot give his patient a new and untried diet. Information obtained by the biochemist from his experiments on animals is passed on to the physician, and the latter incorporates it in his treatment of human beings. An outstanding example was the discovery by Dr. Elvehjem (who testified in this case) of the fact that nicotinic acid was active in curing black tongue in dogs, and physicians immediately applied this knowledge to the treatment of pellegra. Not all of the results obtained by animal experimentation are applicable to human beings, but they cannot safely be ignored. A pediatricist would proceed very slowly and cautiously in feeding to a baby food which had proved to be unsatisfactory in the diet of animals.

(51) Distinguished scientists in the field of biochemistry testified in this case. From rat experiments conducted by them, plaintiff's witnesses were of the opinion that rats fed on butter fat made better and more efficient gains during the first two or three weeks on the experiment than rats fed vegetable oils homogenized into skim milk, and that rats "did much poorer" on the vegetable oil diet than the rats on the butter fat diet. It was their conclusion from such experiments that butter fat contains a superior growth-promoting property, as compared to the vegetable oils, probably a long chain saturated fatty acid (or acids) present in butter fat in small amounts, and not present in certain vegetable oils, including cottonseed oil.

One of the biochemists who testified for defendants was of the opinion, based on rat experiments conducted by him, that the nutritive value of evaporated milk and defendant's product is equal. The others were critical of the rat experiments conducted by plaintiff's witnesses, and disagreed with the conclusions drawn therefrom.

Another scientist, who testified for the plaintiff, had conducted experiments on calves for the purpose of finding a substitute for butter fat in the diet of young calves. He testified that in average gain in weight, as well as in general well being, "the calves fed butter fat excelled those in all other groups," which included a group fed cottonseed oil.

(52) In general, the testimony of defendants' witnesses was to the effect that the product in question is a wholesome, nutritious, useful and harmless food for human consumption, including adults, children and infants. Many of such witnesses prefer the product to evaporated

whole milk, principally on account of its more constant and adequate content of Vitamins A and D. Some of the physicians who testified have used such product in the diet of infants under their care, and prefer it to evaporated whole milk or the special purpose infant foods.

In general, plaintiff's witnesses are of the opinion that the animal experiments have shown that filled milk is inferior to evaporated whole milk in the diet of animals; that "there is a difference between vegetable oils and butter fat which can be demonstrated on animals"; that the substitution of vegetable oil for butter fat in the diet of infants and children should not be allowed "until there has been a large human experience with babies"; and that if filled milk gets into the channels of infant nutrition, it should be prohibited.

(53) The expert witnesses who testified in this case include chemists, biochemists, physiologists, professors in medical school, public health authorities and physicians specializing in pediatrics and nutrition. They are among the most eminent men in America in their fields. Their ability and integrity are not open to question.

In the foregoing Findings, some of the respects in which such experts disagree have been pointed out for the reason that (under the view the Commissioner takes of the law) the fact that the experts do so disagree is itself a material fact. Such differences of opinion are due in part to the recognized human tendency to draw different conclusions from the same facts and in part to the fact that the experts were testifying on subjects concerning which the store of knowledge is still far from complete. New discoveries are constantly being made. At the time the evidence was being taken, an important rat

experiment was being conducted on a larger scale than any heretofore attempted.

The case, however, must be determined in the light of present-day knowledge, as shown by the evidence introduced.

Defendant's product is wholesome, nutritious and harmless, in the sense that it contains nothing of a toxic nature, but it is inferior to evaporated whole milk in the content of fatty acids, phospholipins, sterols and Vitamin E and K, all of which are essential in human nutrition, with the probable exception of Vitamin E in the diet of infants. In addition, evaporated whole milk contains a superior growth-promoting property, found in butter fat and not in cottonseed oil, essential to the optimum growth of infants.

These deficiencies in defendant's product, as compared to evaporated whole milk, are largely made up from other sources when the product is used as a substitute for whole milk or evaporated whole milk in the diet of adults who consume a varied diet. When defendant's product is used as a substitute for whole milk or evaporated whole milk in the diet of infants and children who do not consume a varied diet, such deficiencies are not made up, and the diet is partially inadequate. Defendant's product does "get into the channels of infant nutrition."

(54) Plaintiff has requested a finding of fact to the effect that the evidence does not show any intentional or arbitrary discrimination against defendant's product in the manner in which the statute has been enforced.

The defense of intentional and arbitrary discrimination in the enforcement of the statute was expressly pleaded by defendants in their Answers, and was stricken

therefrom by the Court on motion of the plaintiff. Defendants were therefore not permitted to introduce evidence in support of this plea.

Under these circumstances, it would not be proper to make a finding on the subject of discriminatory enforcement.

(55) The defense of arbitrary and unreasonable discrimination in the statute itself stands on a different footing. This defense was raised by defendants in Supplemental Answers filed with the consent of the Court after the introduction of evidence had been concluded. In allowing the filing of such Supplemental Answers, the Court authorized the Commissioner in his discretion to hear additional evidence pertinent to such defense. Both parties advised the Commissioner, in response to his inquiry, that they did not care to introduce additional evidence. It is therefore proper to make a finding on the defense, which is an issue under the pleadings as now framed.

The evidence does not show any intentional or arbitrary discrimination against defendant's product in the express terms of the statute.

(56) No evidence was offered for the purpose of showing that defendant The Sage Stores Company has violated the law in any particular except as charged in this case, and the State announced that if the findings and judgment are in its favor, it will be satisfied with a limited ouster as to The Sage Stores Company.

CONCLUSIONS OF LAW.

1. The statute in question (G. S., 1941 Supp., 65-707 (F) (2)) has a two-fold purpose: (1) Preservation

of the public health, and (2) Prevention of fraud and deception on the consumers of the state.

2. Every presumption must be indulged in favor of the validity of legislative acts. Before a statute enacted in the exercise of the police power can be held unconstitutional, it must be shown that there was no conceivable reason for the legislative act.

3. If the character or effect of an article, as intended to be used, be debatable, the legislature is entitled to its own judgment, and its judgment cannot be superseded by the views of the court.

4. The constitutionality of an act may be challenged on the ground that it has no rational basis, as applied to a particular article, or that the facts which existed when the statute was enacted have ceased to exist, but such inquiries, where the legislative judgment is drawn in question, must be restricted to the issue whether any state of facts, either known or which could reasonably be assumed, affords support for the act.

5. The fact that a food product is wholesome does not of itself make a prohibitory statute either inapplicable to the product or unconstitutional as applied to it.

6. Whether the purposes of the statute may be attained by regulation or whether absolute prohibition is necessary are questions for the legislature.

7. It is not material that defendant's product was unknown when the statute was enacted.

8. Defendant's product is within the purview of the statute.

9. The legislature is not required to cover all evils of a like character in a single act. It may proceed step by step.

10. Whether other products and compounds come within the statute is not an issue in this case.

11. It is not material that defendant intends for its product to be sold for what it really is and without fraud or deception. Since the product is susceptible of being sold as and for evaporated milk, and is so sold, the legislature has the right in the exercise of the police power to prohibit its sale as an instrument of fraud.

12. Tested by the foregoing principles, the statute, as applied to defendant's product, is constitutional and valid.

13. Defendant The Sage Stores Company should be ousted from abusing its corporate franchises and privileges by selling Milnot and Carolene in violation of the statute.

14. Judgment should be rendered against both defendants for the costs of this action.

X.

Defendants' Exceptions to Commissioner's Report.

Thereafter on January 15, 1943, the defendants filed their joint exceptions to the Commissioner's Report, which are as follows, caption and signatures omitted:

EXCEPTIONS TO REPORT OF THE COMMISSIONER.

Come now the defendants, Carolene Products Company, a corporation, and The Sage Stores Company, a corporation, and present their exceptions to the Findings of Fact and Conclusions of Law of the Honorable J. B. McKay,

Commissioner, heretofore filed herein, and as and for their exceptions the defendants state the following:

Findings of Fact.

1. The defendants except to the failure of the Commissioner to give and make Findings of Fact Numbered XV, XVI, XVII, XVIII, XIX, XX, XXI, XXII and XXV requested by the defendants, for the following reasons:

(a) Because the evidence introduced affirmatively proves said Findings of Fact to be true.

(b) Because there is no difference of opinion concerning the truth of said requested Findings.

(c) Because there is no competent evidence tending to disprove or negative said requested Findings.

(d) Because said requested Findings are competent, relevant and material to the final determination of this cause and essential to the rendition of a proper judgment herein.

2. The defendants except to the failure of the Commissioner to give and make Findings XXIII and XXIV requested by the defendants for the following reasons:

(a) Because the evidence introduced affirmatively proves said Findings of Fact to be true.

(b) Because under the evidence there is no difference of opinion concerning the truth of such Findings.

(c) Because there is no evidence to disprove or negative said requested Findings.

(d) Because said requested Findings are competent, relevant and material to the final determination of this cause and essential to the rendition of a proper judgment herein.

3. The defendants except to the Commissioner's Finding Number 14 for the following reasons:

(a) Because said Finding fails to include therein a finding that it has become a proper and accepted practice to fortify whole milk, skim milk, infant food milk compounds and evaporated milk; by the addition of natural vitamins A and D.

(d) Because the facts which the Commissioner failed to find last above suggested are shown by the evidence herein to be true, competent, relevant, material and essential to a proper determination of this cause, and there is no evidence tending to prove the contrary.

4. The defendants except to the Commissioner's Finding of Fact Number 15 for the following reasons:

(a) Because the Commissioner failed to include in said Finding of Fact the fact that at the time the law in question was enacted fortification of milk and other foods with vitamins A and D had not become generally recognized as a proper, feasible or accepted practice in the manufacture of foods.

(b) Because said omitted Finding of Fact is competent, relevant and material to the final determination of this cause, and essential to the rendition of a proper judgment herein, and there is no evidence tending to prove the contrary.

5. The defendants except to the Commissioner's Finding of Fact Number 18 for the following reasons:

(a) Because said Finding of Fact in the "Tabulation of known Vitamins," with reference to the statement concerning vitamin A, is erroneous in that it fails to state that vitamin A is necessary for the pro-

motion of growth of the human body, which is one of the principal attributes of vitamin A.

(b) Because the Tabulation with respect to the attributes of vitamin A is grossly erroneous.

(c) Because the Finding of Fact omitted is competent, relevant, material, and necessary to the proper determination of this cause, and there is no evidence tending to disprove said fact.

6. The defendants except to the Commissioner's Finding Number 19 for the following reasons:

(a) Because that portion of said Finding, that "Whole cow's milk comes closer than any other food to supplying the necessary vitamins for human life," is untrue, is not supported by the evidence and is contrary to the evidence.

(b) Because said Finding is immaterial, incompetent and irrelevant because there is no evidence that defendants' product could be confused by the consuming public with whole milk.

(c) Because said Finding fails to state that vitamins A, C, D, E, and K and other vitamins are not contained in milk in sufficient amounts to be adequate.

7. Defendants except to the Commissioner's Finding of Fact Number 20 for the following reasons:

(a) Because said Finding makes the implication that the only deficiency in whole milk is in iron, copper, manganese, and Vitamin D, while the undisputed evidence proves it is also deficient in Vitamins A, C, E, K and other vitamins.

(b) Because that portion of said finding, "it is more complete than any other food," is not supported by any evidence and is contrary to the evidence, and is incompetent, irrelevant and immaterial.

(c) Because that portion of said Finding, "cow's milk is the best known substitute for breast milk for the human infant," is not supported by any evidence and is contrary to the evidence as all the evidence tends to prove that cow's milk is inferior to many foods as a substitute for breast milk, and is not in fact a satisfactory substitute for breast milk.

8. Defendants except to the Commissioner's Finding Number 26 for the following reasons:

(a) Because that portion of the finding, "the evaporated milk companies will enter the field if and when filled milk can legally be manufactured and sold," and that portion of the finding, "it does not follow that the income of dairymen generally will be increased if the business of manufacturing and selling filled milk is engaged in on a competitive basis and on a nationwide scale," are not supported by any competent evidence and are conclusions, entirely speculative, not based upon any competent evidence and are incompetent, irrelevant, and immaterial.

(b) - Because the evidence proves that the use of skim milk for human food will permit milk processors to pay a fair and reasonable price therefor, instead of feeding the skim milk to animals or destroying it as is done today, and the income of the milk producers will thereby be increased by the general manufacture of products similar to those manufactured by the Litchfield Creamery Company and sold by the Carolene Products Company.

(c) Because that portion of said Finding, "Since the price of milk is largely governed by the butter market, it necessarily follows that the free and unrestricted manufacture of filled milk would decrease the price paid for whole milk. The sale of filled milk

would reduce the demand for evaporated whole milk, which would also exercise a depressing influence on the price paid for whole milk," is an erroneous conclusion, entirely speculative, and not based upon any competent evidence and contrary to the evidence, for the reason that the price of whole milk is not governed by the butter market but is governed by the ability of the producer and processor to market its component parts. If use can be made of the skim milk by the manufacturer or processor, which will increase the value of the skim milk, correspondingly the price paid to the milk producer will reflect the increased value of the skim milk.

9. The defendants except to the Commissioner's Finding of Fact Number 27 except the last paragraph thereof, and the last sentence in the next to the last paragraph thereof for the following reasons:

(a) Because said Finding of Fact that defendants' product under the names of "Milnut" and "Carolene" containing cottonseed oil was being sold in the State of Kansas at the time of the filing of this suit is contrary to the facts agreed on in this case.

(d) Because said Finding of Fact that defendants' product was being sold under other than the labels set forth in the Commissioner's Finding of Facts is contrary to the facts agreed on in this case.

(e) Because said Finding of Fact is irrelevant and immaterial to the issues in this case for the reason that under the facts agreed on in this case the issue is confined solely to "Milnut" and "Carolene" distributed and sold under the label set forth in the agreed statement of facts.

10. Defendants except to Findings Numbers 28, 30, 31, 32, 36 and 39 for the reason that said Findings are

incompetent, irrelevant and immaterial and not within the issues of this case.

11. The defendants except to the Commissioner's Finding Number 33 for the following reasons:

(a) Because said Finding of Fact, to the effect that the defendants' product resembles other food products, is incompetent, irrelevant and immaterial as all the evidence proves that the defendants' product is wholesome, nutritious, and not injurious to public health, and that it is properly labeled.

(b) Because the implication of said Finding is that the average consumer could not distinguish the article from other articles of food, which is contrary to the Commissioner's Finding Numbers 10 and 11 that each of the defendants' products is properly labeled.

12. The defendants except to the Commissioner's Finding of Fact Number 34, excepting the last paragraph thereof, and for reason for their exception state that the portion of said Finding of Fact excepted to is incompetent, irrelevant and immaterial, and is based on hearsay testimony; and for further reason for this exception the defendants state that any finding with respect to newspaper advertisements prepared and paid for by other than the defendants cannot be made the basis of sustaining the statute in question as to defendants' products, nor the basis for including the defendants' products within the prohibition of the statute; and for further reason for said exception, the defendants state that any conduct of a retailer unauthorized by the defendants is in violation of the written notice and instructions of the defendant Caroleene Products Company, a copy of which is placed in each

case of the product delivered as referred to in the last paragraph of Finding of Fact Number 34, and therefore not chargeable to the defendants.

13. The defendants except to that portion of Finding Number 38, "It is used as a substitute for milk and cream," for the reason that said Finding makes the inference that consumers of Carolene and Milnot would use cream, whole milk or evaporated milk in lieu of Carolene and Milnot, were it not accessible, which is entirely speculative and contrary to the evidence which disclosed that families in the lower income brackets used Milnot as an economy food product and that they would not use cream, milk or evaporated milk in instances where they could not procure Carolene or Milnot.

14. Defendants except to the Commissioner's Finding of Fact Number 40 and for reason for said exception defendants state that the Commissioner erred in finding that all baby foods do not resemble defendants' product or evaporated milk in packaging, color or consistency. The evidence shows that some of these foods have the same packaging, color and consistency as defendants' product.

Defendants further except to the Commissioner's Finding of Fact Number 40 and for reason for said exception defendants state that the Commissioner erred in Finding that such prepared baby foods are ordinarily fed only to sick babies who cannot tolerate whole cow's milk and that pediatricists usually attempt to get such infants back on a whole milk formula as soon as possible. Such finding is contrary to all the evidence in this case and is wholly unsupported by any evidence. A proper finding, contrary to the finding of the Commissioner, is relevant,

material and essential to a proper determination of this cause.

The defendants further except to the Commissioner's Finding of Fact Number 40 because said Finding of Fact assumes that the statute in question prohibits the sale of defendants' product but does not prohibit the sale of prepared baby foods mentioned therein. This Finding is not a Finding of Fact, but constitutes an erroneous conclusion that the statute in question should be construed in one manner with respect to defendants' product and in another manner with respect to the baby foods mentioned in the Finding.

The defendants further except to Commissioner's Finding of Fact Number 40 for the reason that it finds that the baby foods mentioned in said Finding are ordinarily sold by druggists and ordinarily fed to babies only on the advice and under the direction of a physician; when, as a matter of fact, the manner of sale and use of such food is irrelevant, immaterial and incompetent in view of the statute in question and in view of the pleadings in this case. And, in this connection, the defendants state that the finding is calculated to sustain as legal the sale of these baby foods while condemning the sale of defendants' product upon a distinction not recognized by law and in respect of which there was no issue of fact made by the pleading.

15. Defendants except to the Commissioner's Findings of Fact Numbers 41, 43, 44, 45, 46, 47 and 51 for the reason that said Findings of Fact and each of them are irrelevant, incompetent and immaterial; and for further reason for said exception the defendants state that the facts found in these Findings of Fact are not shown to

have any relation to the wholesomeness, nutritiousness or harmlessness of defendants' product as compared to evaporated milk; and said Findings of fact, or any of them, cannot be made the basis of a finding that defendants' product is in any way inferior to evaporated milk in human nutrition when each is considered as a whole.

16. Defendants except to the Commissioner's Findings of Fact Numbers 48 and 50 for the reason that said Findings of Fact are incompetent, irrelevant and immaterial; and for the further reason that the record in this case shows beyond dispute that pediatricists evolved, perfected and fed to infants prepared infant foods compounded of skimmed milk, vitamin concentrates and various vegetable and animal fats with success and that such infant foods have been fed for many years in the State of Kansas and elsewhere in the United States with excellent results and now are being sold and fed in the State of Kansas without injury to the public health.

17. The defendants except to the Commissioner's Finding of Fact Number 52 and for reason for said exception defendants state that the Commissioner erred in failing to find in said Finding of Fact Number 52 the fact that there has been a large human experience in feeding babies proprietary foods composed of evaporated skimmed milk or dried skimmed milk, and vegetable oils and fats fortified with vitamins; that said experience has extended over a period of twenty-five years, with successful results; and that there is no difference of opinion in the field of pediatrics or among other competent authorities on the proposition that specially compounded foods, such as defendants' product, are wholesome, nutritious, harm-

less, beneficial and desirable in the feeding of infants generally, and erred in failing to find that the product in question could successfully be fed to infants. And for further reason for said exception defendants state that the facts that the Commissioner failed to find are affirmatively shown by the record herein to be true, and are competent, relevant, material and essential to the proper determination of this cause.

18. The defendants except to Commissioner's Finding of Fact Number 53 and for reason for said exception state that the Commissioner erred in finding that for the purpose of human nutrition there are deficiencies in the defendants' product as compared to evaporated whole milk. Such Finding is not supported by the record and is contrary to the weight of the evidence and to all of the competent evidence; and in this connection the defendants state that there is no evidence that defendants' product when considered as a whole is inferior to evaporated whole milk in the diet of humans, whether adults, children or infants.

The Commissioner erred in failing to find that both evaporated whole milk and whole milk are partially inadequate when used in the diet of infants and children who do not consume a varied diet. The record shows that neither evaporated whole milk nor whole milk is adequate in the diet of infants and children who do not consume a varied diet. Therefore, there is no harm to children or infants in the use of defendants' product and no injury to the public health from such use.

And for further reason for said exception, defendants state that the Commissioner erred in failing to find that there is no difference of opinion among competent ex-

perts concerning, and no opinion contrary to, the proposition that defendants' product and similar specially prepared foods are wholesome, nutritious, harmless and beneficial when used in the diet of infants and children.

Defendants further except to the Commissioner's Finding of Fact Number 53 and for reason for said exception defendants state that the Commissioner erred in failing to include in said Finding of fact that the authorities on human nutrition hold that defendants' product is wholesome, nutritious, harmless and useful when used as a food for humans, including adults, children and infants; and erred in failing to find the fact that there is no substantial difference of opinion on this point. And for reason for said exception defendants state that said facts which the Commissioner failed to find are affirmatively shown by the record herein to be true, and are competent, relevant, material and essential to the proper determination of this cause.

The defendants except to the statement in Commissioner's Finding of Fact Number 53, that "Defendants' product is wholesome, nutritious and harmless, *in the sense that, it contains nothing of a toxic nature,*" because said statement carried the inference that the defendants' product is simply non-poisonous, whereas the evidence shows no difference of opinion among competent experts on the proposition that defendants' product and similar foods prepared from skimmed milk and vegetable oils, fortified with fish liver oil concentrates, are not only free from harmful effects, but are wholesome and nutritious in the broadest sense of those terms, and are suitable for, and have for many years been successfully used in, the feeding of infants.

This Finding Number 53 is also objectionable in its comparison of defendants' product with whole milk and evaporated milk, in that it stresses the absence from defendants' product of certain vitamins and other food elements which are said to be desirable in the diet of infants and children who do not consume a varied diet, without finding in the same connection the absence from whole milk and evaporated milk of certain vitamins and food elements which are said to be desirable in the diet of infants and children who do not consume a varied diet. The comparison of the defendants' product with evaporated whole milk as made by the Commissioner in his Finding of Fact Number 53 erroneously embodies the idea that evaporated whole milk can, but that defendants' product and other similar products cannot, be safely used in the channels of infant feeding, which is directly contrary to the undisputed evidence in the case.

19. Defendants except to that portion of Finding of Fact Number 55 of the Commissioner, "the evidence does not show any intentional or arbitrary discrimination against defendants' product in express terms of the statute," for the reason that said Finding is not a finding of fact, but a conclusion of law in that it attempts to construe a statute and, therefore, is an improper statement in the Findings of Fact, and was an issue upon which evidence was not admissible.

Conclusions of Law.

1. Defendants except to the failure of the Commissioner to give and make Conclusion of Law Number 1 as requested by the defendants, and as reason for the exception the defendants state that Sub-Section F(2) of

Sec. 65-707, G. S. Kan., 1935, was not intended to apply to or prohibit the sale of a wholesome, nutritious product not injurious to the public health, and does not prohibit the sale of defendants' product.

2. Defendants except to the failure of the Commissioner to make and give Conclusion of Law Number II, requested by the defendants and as reason for this exception the defendants state that under the Commissioner's Findings of Fact and under all the evidence in this case defendants' product is concededly wholesome, nutritious and its sale is without harm or injury to the consumer or to the public health; and the prohibition of the sale of a wholesome, nutritious product not injurious to the public health is unconstitutional in that such prohibition violates Section 17 of Article II and Section 1 of the Bill of Rights of the Constitution of the State of Kansas, and violates the Fourteenth Amendment to the Constitution of the United States in that it denies to these defendants the equal protection of the laws, and deprives them of their liberty and property without due process of law.

3. Defendants except to the Commissioner's failure to give Conclusion of Law Number III requested by the defendants, and as reason for this exception the defendants state that, under the Commissioner's Finding of Fact and under the undisputed evidence in this case, the defendants are entitled to the relief prayed for.

4. Defendants except to the Commissioner's Conclusion of Law Number 2, and as reason for said exception state that a statute is unconstitutional if it be shown there was no reasonable or rational basis for its enactment, and the statute cannot be upheld upon surmise or speculation

but only if there is found a reasonable relation of the statute to the end sought to be obtained.

5. The defendants except to the Commissioner's Conclusion of Law Number 3 as wholly erroneous and inapplicable to the present case because the mere fact that the legislature sees fit to enact a statute, ostensibly for the purpose of promoting the public health, is not conclusive of the question and, where the court finds that the statute purporting to have been enacted to protect the public health has no real or substantial relation to those objects, it is a palpable invasion of the rights secured by the fundamental law and it is the duty of the court to so adjudge and thereby give effect to the constitution.

6. Defendants except to the Commissioner's Conclusion of Law Number 5 and as reason for said exception defendants state that the sale of a food product which is wholesome and the sale of which is not injurious to the public health cannot lawfully be prohibited by statute and the prohibition of such sale is violative of Section 17 of Article II and Section 1 of the Bill of Rights of the Constitution of Kansas and the Fourteenth Amendment to the Constitution of the United States in that it denies to these defendants the equal protection of the law and deprives them of their liberty and property without due process of law.

7. Defendants except to the Commissioner's Conclusion of Law Number 6, and as reason for such exception defendants state that absolute prohibition of the sale of a wholesome, nutritious article of food, the sale of which is not injurious to the public health, cannot be had by statute, and that such prohibition by statute violates Sec-

tion 17 of Article II and Section 1 of the Bill of Rights of the Constitution of the State of Kansas, and the Fourteenth Amendment to the Constitution of the United States in that prohibition of such an article may not be had where regulation will suffice to protect the public interest.

8. Defendants except to the Commissioner's Conclusion of Law Number 8 and as reason for said exception defendants state that their product is not a product that was contemplated or intended to come within the prohibition of the statute; that a reasonable and lawful construction of said statute excepts defendants' product from the prohibition of the same.

9. Defendants except to the Commissioner's Conclusion of Law Number 9 for the reason that said conclusion is an erroneous conclusion of the law. The Legislature is not privileged to proceed step by step in remedying an evil supposed to exist. The legislature under the Fourteenth Amendment to the Constitution of the United States and Section 17 of Article II and Section 1 of the Bill of Rights of the Constitution of Kansas is required to establish a reasonable classification when legislating against a supposed evil. It cannot under the guise of proceeding step by step establish unreasonable, arbitrary and discriminatory classifications.

10. Defendants except to the Commissioner's Conclusion of Law Number 10, in which he declares under the law whether other products and compounds come within the statute is not an issue in this case, and for reason for said exception defendants state that the fact that similar products are sold in the State of Kansas without interference from the authorities of the State of

Kansas and the fact that the authorities of the State of Kansas have singled out defendants' product and attempted to suppress the same constitutes discrimination against defendants in the enforcement of the law in violation of the first section of the Fourteenth Amendment to the Constitution of the United States, prohibiting denial of equal protection of the law, and prohibiting a state from depriving a person of liberty or property without due process of law. And for further reason for said exception, the defendants state that whether other products or compounds of a similar character come within the statute and whether the enforcement agencies have construed the act to cover other similar products and compounds is an issue in the case insofar as administrative interpretation of an act is persuasive with the courts in determining its meaning.

11. Defendants except to the Commissioner's Conclusion of Law Number 11, and as reason for said exception defendants state that since the product is wholesome, nutritious and its sale is without injury to the public health the prohibition of its sale on the ground that it is susceptible of being sold as and for evaporated milk violates Section 17 of Article II and Section 1 of the Bill of Rights of the Constitution of the State of Kansas and the Fourteenth Amendment to the Constitution of the United States, because regulation of the sale of said product by the legislature would afford adequate protection to the public and under such circumstances absolute prohibition is unconstitutional in that it deprives the defendants of liberty and property without due process of law and denies them the equal protection of the laws.

12. Defendants except to the Commissioner's Conclusion of Law Number 12, and as reason for said exception defendants state that the prohibition of the sale of a wholesome product not injurious to the public health violates said Section 17 of Article II and Section 1 of the Bill of Rights of the Constitution of the State of Kansas, and the Fourteenth Amendment to the Constitution of the United States, (a) because its prohibition does not embrace generally all foods containing oil or fat other than milk fat, in violation of Section 17 of Article II of the Constitution of Kansas prohibiting the enactment of a special law where a general law can be made applicable; (b) because its prohibition and punishment violates Section 1 of the Bill of Rights of the Constitution of Kansas by denying to defendants their natural and constitutional rights of life, liberty and the pursuit of happiness; (c) because its prohibition and punishment deprives defendants of their liberty and property without due process of law, in violation of the Fourteenth Amendment to the Constitution of the United States, and deprives defendants of the equal protection of the laws of the State of Kansas, in violation of such constitutional provisions; (d) because its prohibition of the sale of a pure, wholesome, sanitary, nutritious and unarmful food compound is contrary to public policy and an unreasonable interference with private persons, and beyond the scope of the police power.

13. Defendants except to the Commissioner's Conclusion of Law Number 13 and as reason for said exception defendants state that under all the evidence in this case and the Commissioner's Finding of Fact such ouster constitutes a violation of Section 17 of Article II and Section 1 of the Bill of Rights of the Constitution of the

State of Kansas and the Fourteenth Amendment to the Constitution of the United States as aforesaid in the preceding exception.

14. Defendants except to the Commissioner's Conclusion of Law Number 14 and as reason for said exception defendants state that any judgment against the defendants herein for costs in this action would be in violation of Section 17 of Article II and Section 1 of the Bill of Rights of the Constitution of the State of Kansas and the Fourteenth Amendment to the Constitution of the United States as aforesaid in the next preceding exception number 12.

XI.

Plaintiff's Motion for Confirmation of Commissioner's Report.

Thereafter on March 3, 1943, the plaintiff filed its motion for confirmation of the Commissioner's Report, which is as follows, caption and signatures omitted:

MOTION

Comes now the plaintiff and moves the court for confirmation of the findings and conclusions of the Commissioner, J. B. McKay, made and filed in the above entitled action, notwithstanding the objections filed to said findings and conclusions by the defendants.

And now the defendants for the convenience of the court in considering their exceptions to the Commissioner's Report file this, their abstract.

The above and foregoing is a true and correct abstract of the record in the above entitled case.

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Topeka, Kansas,

Attorney for Defendant,
The Sage Stores Company.

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Of Counsel for Defendant,
Carolene Products Company.

The amount necessarily paid for printing this abstract was \$515.61 and was paid by the defendants.

In the Supreme Court of the State of Kansas

STATE OF KANSAS, *ex rel.* A. B. MITCHELL (Substituted), as Attorney General, *Plaintiff*,

vs.

THE SAGE STORES COMPANY, A Corporation, and
CAROLENE PRODUCTS COMPANY, a Corporation,
Defendants.

Original Action in Quo Warranto.—Upon Defendants' Exception to the Report of Hon. J. B. McKAY, Commissioner.

COUNTER ABSTRACT OF PLAINTIFF

A. B. MITCHELL, Attorney General,
C. GLENN MORRIS,
Special Assistant Attorney General,
WARDEN L. NEE,
Special Assistant Attorney General,
Attorneys for Plaintiff.

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In the Supreme Court of the State of Kansas

STATE OF KANSAS, *ex rel.* A. B. MITCHELL (Substituted), as Attorney General, *Plaintiff*,

vs.

THE SAGE STORES COMPANY, A Corporation, and
CAROLINE PRODUCTS COMPANY, a Corporation,
Defendants.

No. 35,143

Original Action In Quo Warranto.—Upon Defendants' Exception to the Report of HON. J. B. MCKAY, Commissioner.

COUNTER ABSTRACT OF PLAINTIFF

Certain evidence of certain witnesses was not abstracted by the defendants, which plaintiff feels to be necessary for a proper presentation of the issues. Other evidence was not adequately abstracted, and some of the evidence abstracted in the words of the abstractor tend to be misleading. Therefore, plaintiff has counter-abstracted certain evidence. Some of this evidence bears upon certain subjects, and the testimony of witnesses on a certain subject is grouped together in this counter abstract.

Wholesome and Nutritious

In connection with the terms "wholesome," "nutritious" and "nutritive value" as used in the field of nutrition and in the trial of this case, the abstract should be extended to include the testimony of the following:

DOCTOR HUGHES

DOCTOR HUGHES, witness for the Plaintiff, testified:

"Q. Now, what about the question of nutritive value and wholesomeness: A. Nutritive value is a term that we use to indicate the value of any particular product to the human or the animal in carrying on its necessary functions. The fats would vary in their nutritive value according to the fatty acids which they yield to the body. If you are talking about that phase of nutrition, if you are talking about the amount of energy they can get by burning, there would be no difference because they have practically the same ratio of carbon and hydrogen, which gives the energy which is derived from burning.

"Now, the question of wholesomeness. That, of course, is purely a matter of definition. If you mean does this compound contain a toxic principle, then none of the ordinary fats, leaving out, of course, castor oil, which is harmful, has any compounds that can be classified as toxic for normal animals. But we are not thinking in terms of that

only now. A compound to be wholesome must contribute to the well-being of an animal or of the human being, and any compound which we put into the diet that crowds out essential things and causes malnutrition is just as unwholesome as if it were containing the toxic principle. Now, that is purely a question of definition. If you mean by wholesomeness, the absence of toxins, then they are equally wholesome, with the possible exception of certain conditions of the digestive tract where large amounts of the volatile acids are given, fats containing them, would cause—that is, they would be less acceptable than ones with a small amount of those volatile acids.

“Q. Well, Doctor, because a substance is wholesome is no indication that it has any nutritional value? A. Well, you couldn't (Tr. 1000) say that. Let's take sugar; cane sugar. So far as we know the function of sugar in the body, one of its main functions is to provide energy; that is the reason that we add more sugar—that is, in feeding a child they can regulate its energy by putting the sugar up and down, either cane sugar or glucose or milk sugar. It would not be correct to say that it had no nutritional value. We could say that it is lacking in many of the things that an animal needs, and if it is put into a diet to the exclusion of things carrying these essentials, it would be very unwholesome.” (Tr. 1001.)

DR. E. B. HART

DR. E. B. HART, witness for the Plaintiff, testified as follows:

"Q. Professor, what is your understanding of the meaning of 'wholesomeness, digestibility and nutritive value' as used in foods? A. Wholesomeness means it is nontoxic. As an illustration, while white bread is wholesome, no one would deny that white bread was not wholesome, but if it is served as the sole source of nutrients, you would find that it wouldn't suffice, so in talking about this case, wholesomeness must be used in reference to the particular thing as the sole source of the diet and if these rats are put upon the skimmed milk and vegetable oil and show this inferiority of development, in that case that is unwholesome to them and unnutritious to them although it may all be absorbed from the intestinal tract and be perfectly digestible, as compared with the whole milk which gives quite different results.

"Q. Then it is not a question of what the product may have in it, it is a question of what it does not have in it? A. Substantially, that is true, if there are no toxic substances there." (Tr. 1068.)

DR. A. G. HOGAN

DR. A. G. HOGAN, witness for Plaintiff, testified as follows:

"The term 'digestibility' has no particular reference at all to nutritional properties or nutritional values, although digestion is essential to the nutritional use of our food.

“Q. How about ‘wholesomeness’? A. ‘Wholesomeness’ indicates that a nutrient can be used to keep the body in a normal condition. It is an indefinite term. Any nutrient that can be used by the body would be regarded as wholesome. Cane sugar, for example, when properly used is wholesome, but if it were the only constituent in the body, death would follow in a comparatively short time.

“Q. And ‘nutritive value,’ what do you understand that means? A. ‘Nutritive value’ indicates the amount that a food contains. It also indicates the amount that they contain.

“Q. Well then, ‘digestibility’ and ‘wholesomeness’ are not the entire measure of nutritive value? A. By no means; they are merely a portion of the idea we include in nutritive value. A food may be digestible and have comparatively low nutritive value. Gelatin, for example, is digestible but it makes a relatively minor contribution to our food requirements. Cane sugar is completely digestible. It too makes a relatively minor contribution to nutritional needs. ‘Wholesomeness’ means that a food is useful, but it does not mean that in ordinary terminology it is sufficient. It may be only a small part of the nutritive requirements.” (Tr. 1219.)

Vitamin Content of Milk

In connection with the vitamin content of milk, the abstract should include the following testimony:

DR. CONRAD A. ELVEHJEM

DR. CONRAD A. ELVEHJEM, witness for the Plaintiff, testified as follows:

"Q. (By Mr. Morris): How many of the vitamins are known to be essential in human nutrition — known to be essential in human nutrition are contained in whole milk and where are these vitamins found in the various portions of the milk?

A. Well, all the known vitamins are present in milk. That is, of course, on a qualitative basis. Now, they differ greatly in the quantities that are present, so we don't want to accept whole cow's milk as being adequate source of all the vitamins. But they are adequate if we consider them in the light of what nature intended. Milk is low in Vitamin D, but nature probably intended we should get some Vitamin D from sunlight. All milk is fairly low in Vitamin B₁, but milk is high in fat, and fat, we know, has a sparing effect on the B₁ requirement. (Tr. 1163.)

"Sometimes we state that milk is low in Vitamin C. It is not low in C if we live on nothing but milk. There is enough C in milk to take care of the requirement if our entire diet is milk.

"Now, the distribution, I think, is evident from our outline that the fat soluble vitamins are found in the fat part of the milk and the water soluble vitamins are found in the water portion of the milk.

"Q. Now, what did you say with relation to B and fat? A. It is well known today that Vitamin B₁ as I said, is necessary for the burning of sugar in the body. If our diet is made up largely of sugar, then we need more B₁ in our diet to burn that sugar. If our diet is made up to a larger extent of fat, we don't need any B₁ to burn that fat, and, therefore, we save on the B₁ requirement.

"Q. In other words, does the relationship of the quantity of the vitamins in milk apparently have something to do with the other constituents in milk?

A. Yes, I think definitely so. I have mentioned the relation of B₁ to fat. We know there is relationship between Vitamin B₆ and the unsaturated fatty acids. Milk is quite rich in Vitamin B₆ but rather low in the unsaturated fatty acids. Nature probably intended that relationship. Choline is relatively low in milk but the protein in milk compensates to some extent for that low choline level.

"Another example that comes to my mind is milk has an excellent calcium phosphorus ration; therefore, we don't need as much Vitamin D for the utilization of that calcium and phosphorus as we would if that ration were not optimum.

"Q. In other words, there is a delicate inter-relationship between the nutrients of milk? A. I think the longer one works in the field of nutrition, the more impressed he is with, as you say, the (Tr. 1163) delicate inter-relationships of all the nutrients." (Tr. 1164.)

Plaintiff's "Exhibit V" (Tr. 1153, 1155), introduced in evidence through Plaintiff's witness, Dr. Conrad A. Elvehjem, contains the following tabulation and data respecting the known vitamins:

"PLAINTIFF'S EXHIBIT V. EEM

TABULATION OF KNOWN VITAMINS

<i>Common name</i>	<i>Chemical name</i>	<i>Disease associated with deficiency of</i>	<i>Necessary for</i>
<i>Fat-Soluble Vitamins</i>			
Vitamin A Carotene may be converted to Vitamin A in body	Vitamin A	Ophthalmia night blindness	Normal vision, resistance to infection, normal skin and lining of internal tissue
Vitamin D	Calciferol	Rickets	Normal utilization of calcium and phosphorus, strong bones
Vitamin E	Alpha-Tocopherol	Sterility, muscular dystrophy	Reproduction, cell division, muscle vigor
Choline in the form of phospholipid is fat-soluble, see below for function			
Vitamin K	Naphthoquinones	Hemorrhagic disease Faulty blood clotting	Normal functioning of liver to allow blood clotting
<i>Water Soluble Vitamins</i>			
Vitamin C	Ascorbic acid	Scurvy	Normal blood vessels healing of wounds
Vitamin B ₁	Thiamin	Beri-beri, faulty carbohydrate utilization	Normal production of energy from carbohydrates
Vitamin B ₂	G-Riboflavin	Cheiosis	Normal skin, nerve and eyes
Niacin	Nicotinic acid	Pellagra	Normal oxidation in tissues
Vitamin B ₆	Pyridoxine	Dermatitis and anemia	Not definitely known
Pantothenic	Calcium pantothenate	Dermatitis	May function in preventing gray hair
Choline	Choline chloride	Fatty liver, hemorrhagic kidney	Normal, phospholipid formation

Biotin	Biotin	Spectacled eye, paralysis	Unknown
Inositol	Inositol	Loss of hair	Unknown
Para-amino- benzoic acid	Same	Gray hair	Unknown

Recognized but not characterized

Grass juice factor

Folic acid

Factors R and S

Factor U

Eluate factor

Milk growth factor for guinea pigs

Vitamin M for monkeys." (Tr. 1154, 1155.)

Difference Between Butterfat and Vegetable Fat

DR. J. S. HUGHES

The testimony of Plaintiff's witness, DR. J. S. HUGHES, relating to chemical composition of fats and to the differences in composition between butter fat and vegetable fats is more completely abstracted as follows:

"Q. Now, Doctor, all these fatty acids, as well as the gasolines, do they not all contain three elements, oxygen, hydrogen and carbon? A. Yes, and not only that, they are contained in exactly the same general structure. (Tr. 983.)

"Q. Do they differ or vary in their assortment and proportions? A. Very definitely. The proportions would be different and the actual fats would be found to be different.

"Q. In other words, one might contain ten and another one five and another one some other figure? A. Oh, yes.

"Q. How many does butterfat contain? A. The literature reports 19 fatty acids derived from butter. You start in here with 4 and without missing a one, go to 26. Those are saturated ones. There is no other such fat in existence as butterfat. Then, under the unsaturated series, it starts in with 10, and you have 10 with a double bond, 12 with a double bond, 20 with a double bond and 20 with four double bonds, so you have a distinctive fat that cannot be duplicated from any other source.

"Q. Doctor, how do the fatty acids in butterfat compare with the fatty acids in cottonseed oil in regard to number? A. There are none of the short chain ones in cottonseed. I think that there are about six or seven found in cottonseed oil. (Tr. 991.)

"Q. Now, do the characteristics of a fat, Doctor, depend upon which of the fatty acids it contains? A. If you mean by 'characteristics,' its melting point, that is whether it is a solid or liquid, whether it is easily oxidized, whether it will react with iodine, and things of that kind, depends entirely upon the length of these chains, and whether they are saturated or unsaturated. The unsaturated chains and the short chains make for low melting point, make for oils, so that you would expect quite a bit of unsaturated compounds in any plant material.

"Q. Then butterfat is unique among all the fats and oils in its content of fatty acids? A. Butterfat from the different species resemble each other in

the number of fatty acids. They vary a little bit in the ratio. There is no other fat that anywhere near approaches it in the assortment of fatty acids. (Tr. 993.)

"Q. Well, Doctor, nature then has arranged that this particular type of fat (butterfat) be available for the growth and development of the young of all species of mammals? A. I know of no exception." (Tr. 994.)

Biochemists and Human Nutrition

DR. A. G. HOGAN

With reference to the relation of the working of the biochemist to human nutrition, Plaintiff's witness, DOCTOR A. G. HOGAN, testified as follows:

"Q. What is the importance of research and biochemistry in animal nutrition to the problem of human nutrition? A. In the field of vitamins, it is indispensable. Practically all of the fundamental information we have concerning vitamins was obtained by the biochemists through research on laboratory animals. So far as one could tell, we would have no information at the present time on any vitamin, with one or two possible exceptions, were it not for the pioneer work of the biochemists through researches on animals.

"Q. Then the advancement which has been made by the physicians in dealing with the problem of human nutrition is based upon the research in chemistry and animal nutrition? A. That is correct. Af-

ter these vitamins have been discovered and something learned of their properties and their role in nutrition, they were applied to cases of human disease." (Tr. 1227.)

DR. CONRAD A. ELVEHJEM

On the same subject plaintiff's witness, DR. CONRAD A. ELVEHJEM, testified as follows:

"Q. Will you discuss briefly the relation and importance of biochemistry and nutrition studies on animals to human nutrition? A. Well, these studies are so intimately related that I don't know as it takes much discussion. I think I was particularly impressed with the close relationship during the past year when I worked on a subcommittee of the Food Nutrition Committee of the National Research Council to set up standards for the requirements for the various nutrients of the human body and much of the early work was based on animal experiments. In our own laboratory we have been working attempting (Tr. 1150) to establish the B requirement of humans, using animals. We had come to the conclusion that the requirement was one to two milligrams per day. While our investigation was going on, Dr. Wilder and the co-workers at Mayo's had the opportunity to actually study this problem on human patients, and it was very interesting to us that they came to the same conclusion that the human requirement is one to two milligrams per day, and during our investigation of the literature we found similar relationships for Vitamin A. The early workers on animals had

come to certain conclusions regarding the Vitamin A requirement, and more recent studies on humans verify the early figures, so that the two fields are so closely integrated that to me it is almost impossible to differentiate the two.

"Q. I want to read to you or I want you to read this sentence starting on the first page, bottom of the first page of Dr. Fishbein's introduction to this book on vitamins. I think it relates to that subject.

A. 'The average reader will probably be impressed by the fact that studies of the vitamins are concerned not only with the human being but also and particularly with the diets of numerous animals, including rats, dogs, pigeons and chickens. Indeed, some of the investigations made on animals have been highly indicative of new therapeutic investigations related to human disease.'

"Q. Now, that book is recommended for the use of physicians? A. Yes.

"Q. Will you give us some examples of your discoveries in animal nutrition which have been applied to human nutrition? A. Well, our work on nicotinic acid probably was applied directly, applied immediately to human nutrition, perhaps faster than any (Tr. 1151) other of the vitamins because there was an immediate need for the use of some antipellagra factor, and as soon as we identified nicotinic acid, it was only a matter of days before the medical workers were interested in applying it to the treatment of pellagra.

"Q. Doctor, how about your studies on copper and iron? A. Yes, they were applied rather rapidly. In fact, I was directly connected with the application of those results because together with Doctor Mendenhall, who is in charge of the Child Health Centers here in Madison, we undertook direct studies on children, she doing the work with children and I training the technicians who went into the clinics to make hemoglobin determinations. I prepared the solutions, the iron and copper solutions that we used for treating those patients.

"Q. What was the purpose of those studies? A. Well, our interest was to see whether the anaemia that we encountered amongst the children here in Madison could be cured with iron alone or whether iron and copper were more effective, and our conclusions were that in most cases the response—we only obtained a reliable response when we used iron and copper and when we used iron alone the response was very slow or no response at all.

"Q. Has the result of that experiment been accepted and applied throughout the country at the present time? A. Yes, I think that is rather widely applied and accepted by pediatricians in this country." (Tr. 1152.)

Infant Foods

DR. ALEXSIS F. HARTMANN

The testimony of DR. ALEXSIS F. HARTMANN, Plaintiff's witness, regarding the use of infant foods is more completely abstracted as follows:

"A. Well, there are many proprietary preparations on the market. There are different kinds of dried milks; some of which have had part of the fat removed, half the fat removed, for instance, like Dryco, and some of which have had none removed, like Klim. Then there are products that differ considerably from the original whole milk, such as the synthetic milk adapted that Doctor Gerstenberger first devised and others that are given names like Similac and Reolac, and there are protein milks on the market, viz., "milks," as they are called sometimes; just any number. Occasionally these substances are used in infant feeding. (Tr. 1292.)

"Q. Aren't there pediatricians in this country who depend on those products in artificial feeding of infants just as you depend on Marriott's formula?
A. I should think certainly there are, but I would think they are getting fewer all the time. (Tr. 1293.)

DR. DAMON O. WALTHALL

The following testimony of DR. DAMON O. WALTHALL, witness for Defendant, with reference to testimony on proprietary foods has been omitted from Defendant's abstract and should be included:

"Q. Just a minute, I hand you a can and ask you if that is a can of S. M. A. A. That is.

"Q. That is in the dry form, I believe? A. That is right.

"Q. In the use of it, you dilute that with water to get it into the liquid form? A. Yes.

"Q. Will you read into the record the label on that can? A. (Reading): 'S. M. A., a Food Specially Prepared for Infant Feeding.' (Tr. 532.)

"Q. Now, on this other side. A. (Reading): 'It is recommended that S. M. A. be fed to infants in accordance with the physician's directions.' (Tr. 532.)

"Q. Read the label of that into the record, will you? A. (Reading): 'Similac, a Food for Infants. You don't want the laboratory name.

"Q. No, no. A. (Reading): 'Similac. A powdered modified milk product especially prepared for infant feeding. Use Similac only on order and under supervision of a licensed physician.' (Tr. 534.)

"Q. Now, these products here of S. M. A.— A. (Interrupting): And Similac.

"Q. Can I open them? A. There is a screw there. Just take that and it takes the top off right here (indicating).

"Q. This S. M. A. can is a can you testified about a while ago on your direct examination? A. That is right.

"MR. MORRIS: May it please the Court, I offer that in evidence. I don't care how you identify it. And this can I hold in my hand is Similac and that is a can you testified about a while ago from the label? A. Yes.

"MR. MORRIS: And I offer that in evidence.

"THE COMMISSIONER: Is there any objection, Mr. Clark?

"MR. CLARK: No, sir.

"THE COMMISSIONER: They will be received.

(Said cans of S. M. A. and Similac, handed to the reporter, were marked for identification as 'Plaintiff's Exhibits E and F, EFMS,' which being offered in evidence, are filed with the record in this case.)

"Q. (By Mr. Morris): Now, Doctor, this can I hold in my hand is a can that is considerably different in size from an ordinary can of evaporated milk, is it not? A. Yes, sir.

"Q. And different in size from a can of Carolene that they talk about? A. That is right.

"Q. What color would you say the can is? A. That is pink.

"Q. Now, I open this can and I want you to tell me what that product (Tr. 552) in there looks like. A. It is a yellowish white flaky powder, dry powder.

"Q. Doctor, I hold in my hand this can of Similac and will ask you to state what color this can is.

"MR. GROVER: I didn't understand, the color of the can or the color of the inside?

"MR. MORRIS: I am asking the color of the can. A. A very light green. Is that right? I am terribly color blind when you get to the light greens or light blues.

"MR. CLARK: That is about right.

"Q. (By Mr. Morris): That can is about the same size can as the S. M. A.? A. Well, practically so. The S. M. A. can is, for instance, slightly larger.

"Q. It says on the label here—will you read that weight on there? A. Net weight, one pound on Similac.

"Q. And what does the other say? A. Contents, yes, one pound.

"Q. Referring to the Similac, state what that substance in there looks like, and its physical properties as apparent to you. A. It is a very faintly yellowish white powder.

"Q. Does it have an odor? A. The S. M. A. has a very slight odor of cod liver oil.

"Q. And does the Similac have any odor? A. I don't believe so. Do you think so?

"Q. I am asking you. A. I can't make any odor out of it." (Tr. 553.)

"Q. You are prescribing these foods like Similac and S. M. A. quite often. Do you know where they purchase that stuff? A. At the drug store.

"Q. Do you know where they purchase the defendant's product? A. At the grocery store. They also purchase evaporated milk at the grocery store that they use in our feedings and they purchase (Tr. 557) the liquid cow's milk either from a store or a dairy."

"Q. You spoke of a product here with soybean oil. That was prepared, I believe you said, in cases where there was allergy? A. That is right." (Tr. 558.)

DR. PAUL E. BELKNAP

DR. PAUL E. BELKNAP, called as a witness for Defendant, testified on cross examination that he had testified two years before that he did not recommend Carolene Company product containing coconut oil; that there had been no research upon the subject, and then testified:

"Q. Well, I am asking you now, Doctor, what is the difference between coconut oil and cottonseed oil that would make you say now that it is a product

which you would recommend without any further research? A. They are both digestible fats. (Your (Tr. 789) cottonseed oil contains Vitamin E, for one thing, that is not present in coconut oil.

"Q. So far as the coconut oil and the cottonseed oil themselves are concerned, they are more or less interchangeable, aren't they? A. Yes.

"Q. Doctor, is Vitamin E necessary for an infant in nutrition? A. I do not know." (Tr. 790.)

Nutrients Removed in Processing Defendant's Oil

JAMES J. GANUCHEAU

JAMES J. GANUCHEAU, a witness for the Defendants, testified he lived in New Orleans, Louisiana; was a chemical engineer; graduated from Tulane University, Bachelor of Engineering in Chemical Engineering, degree and a full chemical engineering degree in 1931; belonged to the American Chemical Society, The American Oil Chemists, American Institute of Chemical Engineers, and had been an officer in some of the professional societies and was connected at the time of his testimony with the Southern Cotton Oil Company, in charge of a laboratory in Louisiana (Tr. 239, 340).

"A. Well, the first process we put it through is refining with caustic soda.

"Q. Is that represented as it is? A. That would be the refined oil.

"Q. That is the sixth vial. Now, what is the next step after that? A. Well, it would depend. That would give us refined oil, and the next step would depend on what class of oil we wished to make. For instance, we usually give it a slight bleach, take any suspended (Tr. 245) soap that has not settled out in the process of settling. And it would then go to a process of destearinization, taking out the natural stearins.

"Q. What is the stearin? A. Well, some of the oils having the high melting part portion, would settle out if put in a refrigeration and would tend to break the emulsion. So to offset this, we put it in a process which is really a mechanical chilling. In other words, we chill the oil down and don't add anything to it and let these natural stearins settle out and press them out in a filter press very similar to the petroleum company when they dewax the lubricating oil.

"Q. Before we get too far into that, I am going to take you on through these vials. What is this vial (indicating)? A. That is just a bleached oil.

"Q. That is different? A. This would be the refined (indicating) and this is the bleached (indicating), and most probably the bleached and deodorized in the simplest form of making the finished oil would be to either destearinize or winterize it, as the common commercial trade word is for it, winterize the oil, and we can either winterize it or not winterize it; and then you have cooking oil if you don't winterize and you have salad oil if you winterize.

"Q. Then the next one, the white vial, what is that? A. That is partly hydrogenated cottonseed oil.

"Q. You say 'partly hydrogenated.' What would be the difference between partly hydrogenated and completely hydrogenated oil, as to its solidity? A. In one case you would desaturate all of the unsaturated bonds off of the fatty acids and that is usually expressed as iodine value, the common term for the saturation (Tr. 246) of an oil or the unsaturation by the iodine value.

"Q. How would you describe then the degrees of hydrogenation? Does it depend upon the saturation? A. The degree of hydrogenation would depend on the degree in which we saturate the unsaturated or liquid acids off of that particular oil, as cottonseed oil contains a very large percentage of linoleic acid.

"Q. Of what? A. Of linoleic acid; and we try to hydrogenate the linoleic acid. The first step from linoleic to oleic is two hydrogen atoms and we try to hydrogenate from linoleic to oleic in a lot of our processes and not try to hydrogenate any of the oleic to stearic. This process is called 'selective hydrogenation,' in which we select the fatty acids joined to a tri-glyceride, and it might be the same fatty acid joined to one particular tri-glyceride and we attempt to hydrogenate only a part of that molecule and not hydrogenate the other part. In other words, we scramble an egg and cook only the yellow." (Tr. 247.)

"A. By hydrogenation; we have to go through a process of hydrogenation. In the process as I explained before, we can either just bleach and deodorize this product here or put it through a process of destearinization, as this particular oil will contain a certain amount of natural stearins which are inherent to cottonseed oil. The amount of stearins will depend upon the latitude, mostly." (Tr. 254.)

That by the use of fuller's earth, chlorophyll is removed from the oil by absorption. The oil contains a certain amount of chlorophyll from the hull (Tr. 254).

"Q. What else besides chlorophyll is there that gives it this color? A. I don't know exactly, but there is some carotinoid of the pigments—which one of the carotinoids I don't know, but one of the carotinoids; which one, A or D, I don't know—that gives it this yellow color, and the carotinoid pigments can be destroyed or absolved as we are doing here, or they can also be destroyed by heat. Only some of them are. Here we have the three processes now, the crude, refined and bleached." (Tr. 255.)

The witness identified a book published by George S. Jaimeson in 1932, entitled, "Vegetable Fats and Oils," and stated he was acquainted with that portion stated on page 26 under title of "Nutritive Value," which was read into the record. Said article recited the following:

"The vegetable fats as a rule contain but small quantities of the fat soluble vitamins A, D and E. After refining and deodorization, they are usually

devoid of vitamins. In this respect alone are they inferior to those which contain them." (Tr. 161B.)

"Mr. Ganucheau, in your testimony a while ago, as I understood you, I may be wrong but I understood you to say that the iodine was absorbed by the refining process. If you did say that, did you mean to say that? A. No, there is no iodine used at all in the process of refining, hydrogenation. It is merely a gauge by which we take about two drops and in the laboratory tell the degree of hydrogenation. Iodine is a whole lot more active compound than hydrogen, so we act on the sample of oil with iodine and see how much iodine it will absorb. Iodine will go into the unsaturated parts and we can measure the amount of iodine we put in, and this way we can tell how much unsaturation or saturation we have, but the iodine number is merely a degree or method of telling how saturated or unsaturated the process has been.

"Q. What did you mean to say was absorbed?

A. It is absorbed into the fat by the determination of the run to see how the hydrogenation is progressing.

"Q. In other words, it is the test that you make?

A. It is strictly a test. It has nothing to do with the hydrogenation at all." (Tr. 265.)

"Q. What is the iodine test you speak of? Is that some way of identifying a product? A. No, it is just a way of telling how far the hydrogenation has progressed." (Tr. 267.)

"Well, what is the iodine number of this product you furnish to the Carolene Products Company? A. Well, it will vary with the oil which we receive. It will be about, I imagine, from 60 to 63." (Tr. 268.)

"Q. And that determines the extent of unsaturation? A. Yes, that is exactly right.

"Q. And the product you furnish the Carolene Products Company is the dehydrogenated cottonseed oil? A. The hydrogenated cottonseed oil." (Tr. 269.)

"Q. What is the solidifying point of this product you furnish the Carolene Products Company? A. The solidifying point?

"Q. Yes. A. The setting point is about 31 to 32° Centigrade, setting point." (Tr. 269.)

DR. J. S. HUGHES

The testimony of Plaintiff's witness, DOCTOR J. S. HUGHES, with reference to the importance of serols and phospholipins in nutrition and their absence from hydrogenated cottonseed oil, is reported as follows:

"Q. Did you read Doctor Ganucheau's testimony in this case? A. I read that last night, yes, sir.

"Q. You read about the process of manufacturing of the hydrogenated cottonseed oil? A. Yes, sir. He stated that the phospholipins were removed, just as I stated, in the process of getting out the unde-

sirable things from a commercial standpoint, but they are desirable from a nutritional standpoint.

"Q. Then the hydrogenated cottonseed oil used in this product does not replace the phospholipins that are lost by the cream separation? A. That's right.

"Q. Doctor, what is a sterol? A. It is a solid alcohol. An illustration in the animal kingdom would be cholesterol and a contamination of that is ergosterol. Vitamin D is a sterol.

"Q. Are sterols essential to the body? A. Cholesterol is found in every living cell in the body. As yet its true function has not been determined.

"Q. Are sterols found in whole milk? A. Yes, sir.

"Q. Are they in the milk fat? A. Yes, sir; they go almost entirely into the cream and then into the butter.

"Q. Would the addition of hydrogenated cottonseed oil or any other vegetable oil to skimmed milk replace the sterols which are lost with (Tr. 1005) the cream? A. In the first place, you never find in plants the same sterols that you find in animals. In the second place, it would depend upon what procedure they used in the preparation, and in this particular testimony, the chemist stated that they wintered or chilled the fat for the specific purpose of removing the sterols, and, of course, they would not be in the pure fat products. (Tr. 1006.)

With reference to the Vitamins E and K con-

tent in milk, the abstract should be extended to include the following testimony:

DR. HUGHES testified:

"Q. Now, is Vitamin E contained in whole milk?

A. I have carried on experiments through two or three generations of rats using as the exclusive diet milk plus the necessary minerals, and there is no evidence in that case of any deficiency. We assume that Vitamin E is present because if you feed a food, you would, of course, get the results from the lack of E." (Tr. 1008.)

"Q. Is K contained in milk? A. You get no K deficiency where milk is fed." (Tr. 1009.)

"... We know definitely that the baby has to have Vitamin K. One of the serious diseases in the first few days of life—we know that most infants receive nothing but milk, and they do not have this disease when they get milk, and you can draw your conclusions as you please. The child has to have K. They show no deficiency if they get milk. You can argue about whether it is in the milk or whether the milk enables the child to get it in the digestive tract. That is immaterial so far as I can see." (Tr. 1010.)

Animal Experiments**PROF. E. B. HART**

In connection with the animal experiments performed under the direction of Plaintiff's witness, PROF. E. B. HART, the following testimony was given:

Q. (By Mr. Morris): Have you conducted any experiments comparing hydrogenated cottonseed oil with butterfat? A. Yes.

Q. The hydrogenated cottonseed oil which you used, will you state what the physical constants of that were? A. The hydrogenated cottonseed oil had a melting point of 40.7 to 41 C., and an iodine number of 59.8 to 59.

Q. I think there is testimony in the record that the hydrogenation of the product used by the plaintiff—by the defendant in this case, the constance is 38 to 63 iodine number. Would hydrogenated cottonseed oil that you used in your experiment here be of a like character to their product? A. I should say so.

Q. This particular experiment you are about to testify regarding, is entirely separate and distinct from these others you have just testified about? A. It is. There is no publication on this.

Q. Will you define and describe your experiment in connection with the comparison of this hydrogenated cottonseed oil with butterfat as to their comparative nutritive values? A. Well, in this experiment, the skimmed milk, mineralized and reinforced with the particular Vitamins A, D and

E, was used as the basal material. Into that was homogenized the butter oil at four percent level, cottonseed oil two, refined cottonseed oil, unhydrogenated, at four percent level; and then this partly hydrogenated cottonseed oil that was said to be used in the making of filled milk. Males and females of twenty-one days of age were again used for these experiments, male rats and (Tr. 1057) females twenty-one days of age. Weekly records of weights and appearances were kept, and I have put on the chart the record of growth and here is the record of growth together with pictures of two of the animals, one on butterfat and one on the hydrogenated cottonseed oil after six weeks on the experiment.

"MR. MORRIS: Will you mark those as exhibits? (Said documents, handed to the reporter, were marked for identification as 'Plaintiff's Exhibits Q and R. RFM'.)

"Q. I hand you what has been marked Plaintiff's Exhibit Q and is it the chart you just made reference to? A. Yes.

"Q. That shows the result of the growth of partly hydrogenated cottonseed oil in comparison with butterfat and ordinary cottonseed oil? A. That is right.

"MR. MORRIS: I offer this in evidence, and the photograph attached to that exhibit marked Exhibit R is a picture of some of the rats in that experiment? A. Two of the rats, one of them on the butterfat and another one on the hydrogenated cottonseed oil.

"Q. One rat appears to be larger. What rat is that? A. The butterfat rat.

"MR. MORRIS: I offer this in evidence.

(Which said Plaintiff's Exhibits Q and R, so offered in evidence, having been previously duly marked for identification, are in words and figures as follows:) (Tr. 1058.)

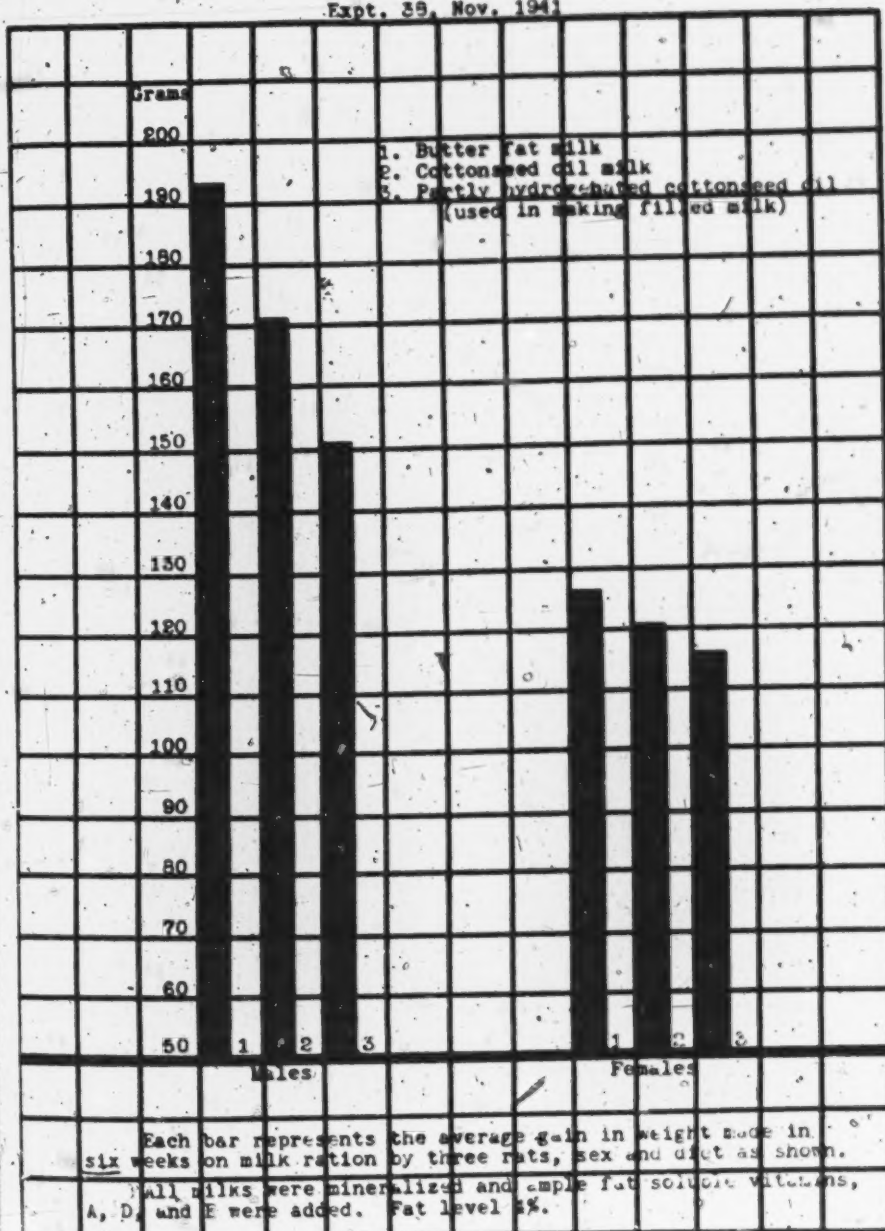
"Q. (By Mr. Morris): I want to ask you, Professor, What are your conclusions from this experiment you just testified about? A. Well, those records definitely show the superiority of the butterfat over the hydrogenated cottonseed oil in the early growth of these young rats.

"Q. The hydrogenated cottonseed oil in the diet compared with ordinary cottonseed oil, what is your comment on that? A. The hydrogenated cottonseed oil was inferior to the ordinary cottonseed oil in that experiment.

Plaintiff's "Exhibits Q and R" (Tr. 1057-1059) offered in connection with the foregoing testimony, are as follows:

PLAINTIFF'S EXHIBIT Q (Tr. 1057)

Expt. 39, Nov. 1941



PLAINTIFF'S EXHIBIT R (Tr. 1059)



Butterfat
228 gms

Pack. Hyg. C. Seal Oil
9 week old
6 ... on. Exp

In connection with Dr. Hart's experiment 43 performed in January, 1942, the witness testified as follows:

"Q. Professor, did you have any other experiments along this line? A. Yes, we have other experiments. We haven't been satisfied completely with the differences that we have secured with our skimmed milk ration. While they have indicated very definitely differences, yet we wondered if we could show more pronounced differences by modifying our ration from a liquid form of ration to a dry form of ration. We were led to this inquiry or change by some results that recently appeared in the literature from Europe. Two investigators by the name of Boer and Jansen at the University of Amsterdam, at least in the Laboratory for Physiological Chemistry in Amsterdam, began a study sometime back of the nutritive value of butterfat as compared with olive oil, and they used for their ration a dry ration made up of 72 parts of rice, 5 parts of cassia, 3 parts of salts and 10 parts of yeast. Then to that ration they added 10 parts of a particular fat that they wished to investigate, and in addition for the fat soluble vitamins they added the nonsaponifiable fraction of 2 grams of butterfat. The yeast supplied all of the water soluble vitamins, and they obtained most remarkable differences in nutritive value of the olive oil as compared with the butterfat in favor of the butterfat. We thought perhaps we could improve our technique in this work by adopting a ration somewhat like they have; and then, too, using animals of younger age, not twenty-one days but

down to fourteen and fifteen days, because rats that have been twenty-one days have had the advantage of the synthetic properties of the mammary gland and may have gotten these things that we are talking about today and if we could reduce the time perhaps we could get more pronounced differences, and so we have carried out some experiments now with fourteen and fifteen day old rats. That is just the time when they open their eyes, plus this dry ration of ours which is like the one that Boer and Jansen used only we have reinforced it with alpha-tocopherol with carotene and with two drops per week of drisdol, a preparation containing Vitamins A and D.

"Q. That one subject you mentioned is Vitamin E? A. Yes, alphetocopherol is Vitamin E. Here is an exhibition of what we get with butterfat, corn oil and olive oil on a ration of that character at the end of three weeks. (Documents, handed to the reporter, were marked for identification as 'Plaintiff's Exhibits S and T, EFM'.)

A. While I don't want any of the ladies to become excited here, I did bring down an exhibition of some rats that are on this dry ration."

"Q. Before you get into that, let me ask you this? The paper I hold in my hand, which has been marked Exhibit S, and the picture attached to it of three rats, marked Exhibit T, shows the result of this experiment you have just been speaking about? A. That is right. (Tr. 1060.)

"Q. All right, you may go ahead. A. Now, here are two rats that I have brought down that are

working on corn oil and on butterfat and I just want you to see them, see the difference. Perhaps you would like to feel this one.

"THE COMMISSIONER: No. A. I want you to see particularly the hair coat on that one as compared with this one (indicating). This one (indicating) weighs about 50 grams less than this one (indicating).

"THE COMMISSIONER: The one in your left hand is butterfat, I take it? A. That is butterfat. Any animal husbandry man judges animals by the condition of the hair coat. These are both males.

"Q. (By Mr. Morris): I notice this one (indicating) you say is fed on butterfat has a thicker and heavier coat of hair. A. Yes.

"Q. Is that true of all of the others? A. All the others in the series are like this, where they get butterfat.

"Q. Those on the diet—A. (Interrupting): The corn oil are like this (indicating) or olive oil.

"Q. In Plaintiff's Exhibit S, you have three bars here, No. 1, No. 2 and No. 3. No. 1 represents what? A. The butterfat.

"Q. And that represents the average gain in weight made during the first three weeks? A. That is right.

"Q. What does No. 2 represent? A. Corn oil.

"Q. What does No. 3 represent? A. Olive oil.

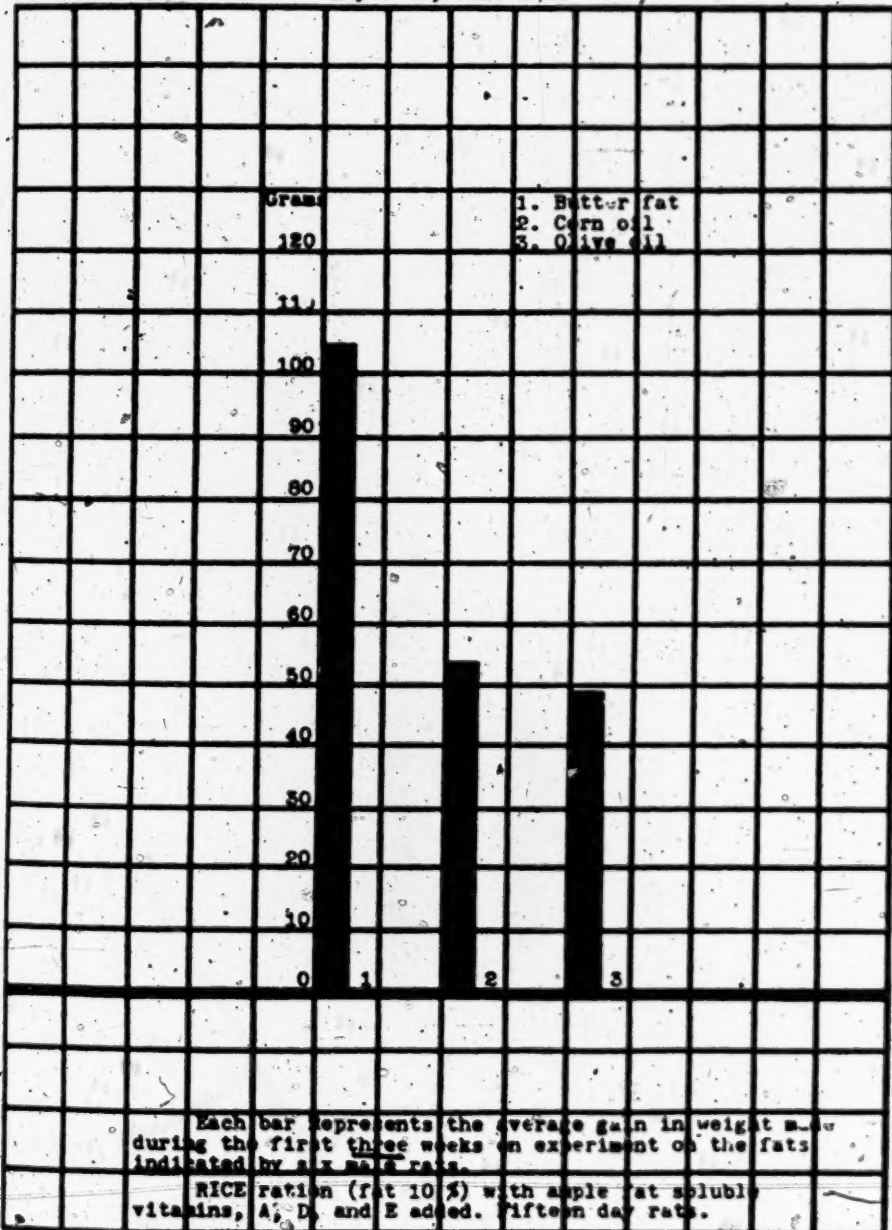
"MR. MORRIS: I offer that in evidence. The pie-

ture attached there is the picture of three of the rats? A. Yes.

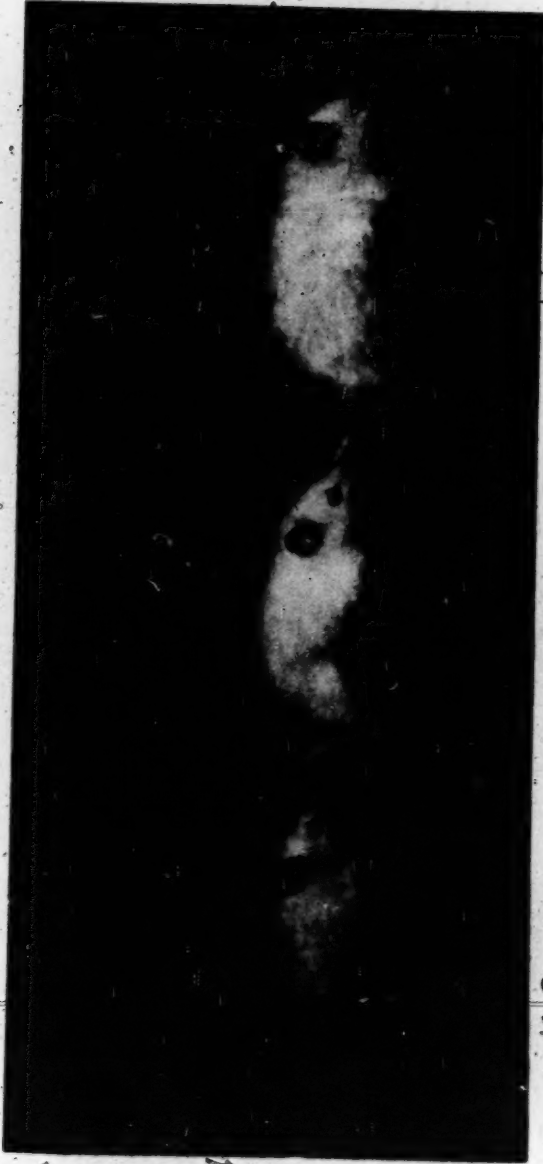
(Which said Plaintiff's Exhibits S and T, so offered in evidence, (Tr. 1061) having been previously duly marked for identification, are in words and figures as follows) (Tr. 1062):

PLAINTIFF'S EXHIBIT S (Tr. 1061)

Expt. 43, Jan. 1942



PLAINTIFF'S EXHIBIT (Tr. 1062)



63 gms

(Olive
oil)

64 gms

2 weeks after Exp.
Rice satom
(Corn Oil)

102 gms

Butter fat

DR. CONRAD A. ELVEHJEM

With reference to the foregoing experiments of Prof. Hart, plaintiff's witness, DR. CONRAD A. ELVEHJEM testified as follows:

"Q. Did you take part in the research studies reported in the testimony here by Professor Hart on the comparative nutritive value of vegetable oils and butterfat? A. Yes, I did.

"Q. Are you in agreement with the results of those studies as testified to by Mr. Hart? A. Yes, I agree with the results. We discussed all of the data and we are in complete agreement on the conclusions before any of the work was published." (Tr. 1165.)

DR. T. W. GULLICKSON

Plaintiff's witness, DR. T. W. GULLICKSON, gave testimony as follows relative to his animal feeding experiments:

"Q. Did you at any time have any difficulty getting the calves to drink any of the prepared milks? A. Not a great deal. In fact, on the whole we would say that there was practically no difficulty in that respect, but we did find that it was necessary in some cases, in fact, a number of cases, due to the poor physical condition of the calves, either to reduce the amount of the product that was fed or to change temporarily to whole milk or to reduce the fat content of the milk that was fed.

I think you will find that we indicate that every now and then, especially in some groups, that we reduced the fat content to 2%. This occurred most often with calves that were fed either corn oil, soybean oil, or cottonseed oil, some of the others, not very many.

"Q. They did so poorly that they had to be changed back to milk fat to keep them from dying?

A. That is right.

"Q. Throughout this experiment did you have calves die that were on the oil diets other than butterfat? A. Oh, yes. Yes, we had calves die.

"Q. Did any of the calves die that were on the butterfat diet? A. I think one did, one of the first ones. You will find that calves do occasionally die even on the best care. As I say, these (Tr. 1196) calves came from a variety of sources." (Tr. 1197.)

"The cottonseed oil group consisted of four calves. I might say that there were more in both the corn oil and the cottonseed oil that I simply didn't include because most of them died before—or quite a number died before they were 30 days of age. But there were four in the cottonseed oil group and their average daily gain was .31 pounds per day." (Tr. 1198.)

To correct the statement made at page 346 of the abstract: "That they added cottonseed oil and Vitamin concentrates to supply Vitamins A and D." (Tr. 1191).

The testimony of Dr. T. W. Gullickson in this connection is quoted from the record:

"Q. Now, as I understand, you took these oils as one ingredient and skimmed milk as another, and what else did you use in that? A. Well, we, of course, knew that vegetable oils and these products that we fed do not contain Vitamins A and D, and those are the vitamins that we from experience found out or know that calves required, and so we added codliver oil or if we didn't use codliver oil, we used the vitamin concentrates.

"Q. Then your product that you used in this feeding experiment was different vegetable oils, skimmed milk, and Vitamins A and D? A. That is right." (Tr. 1191.)

There were introduced in connection with the testimony of Doctor Gullickson, the following exhibits: Exhibit X shows loss of hair about ears, neck, head and rear legs.

86

49



no 329 at 60 days.

28811

Bubbertal
No 324

Corn oil
No 317



114 day

174 day old

Doctor Gullickson's testimony is that the cornoil calf was 12 days old and the butterfat calf was ten days old when this experiment started. At that time the butterfat calf weighed 84 pounds and the cornoil calf weighed 92 pounds. At the conclusion of the experiment the butterfat calf weighed 284 pounds and the cornoil calf, 155 pounds. (Tr. 1203.)

Cottages on
No. 323

House with
No. 314



28811 C

179 days old

179 days old

Doctor Gullickson testified that the whole milk calf above was started on the experiment at 7 days of age and that its weight at the start of the experiment was 77 pounds; that its weight when taken off the 137 days was 253 pounds. He testified that the cottonseed oil calf started at 10 days of age, weighed 93 pounds and when taken off, weighed 209 pounds. (Tr. 1204.)

91
59

Corn oil

Whole milk



214 Both 179 days old. 317

Doctor Gullickson testified that the whole milk calf No. 314 was 7 days old at the time the experiment commenced and its weight at that time was 77 pounds. When taken off it weighed 253 pounds. The other calf No. 317, was on corn oil and started at 12 days of age, weight 92 pounds, and when taken off, weighed 155 pounds (Tr. 1206).

Through Plaintiff's witness, Dr. E. B. Hart, Defendant's "Exhibit 155" was introduced on cross examination, it being an article from National Butter and Cheese Journal of 1942, entitled "Food Value of Milk shown in new Research Report" (Tr. 1105), the last paragraph of said exhibit reading as follows:

"These results also make it clear that filled milk should not be allowed to get into the channels of infant and child nutrition. It may be healthful food but show some deficiencies, just as do many of our staple foods. Where a food becomes the sole nutrient of the young, such as whole milk does, then the commercial distribution of an inferior substitute should be prevented." (Tr. 1105.)

Plaintiff's "Exhibit-LL" (Tr. 1848) introduced through Dr. J. S. Hughes, being a "Table of Comparative Food Values of Evaporated Milk and Milnot," contains data covering the vitamins content of evaporated milk and

Milnot, which has been omitted from the abstract. The omitted portion of this exhibit is as follows:

Public Health Testimony

PEARL RORABAUGH

PEARL RORABAUGH, a witness for Plaintiff, testified that she lived in Topeka, Kansas and has a Bachelor and Master of Science degree in the Department of Home Economics in the Kansas State College; that her work has been public nutrition or community nutrition. She had served as a community nutritionist for the American Red Cross in Texas and Oklahoma; that she had been with the Kansas State Board of Health for five years as nutritionist for the State Board of Health, which carries on a program of education with regard to nutrition; that the State of Kansas has a public health nurse service in the cities and counties (Tr. 1374); that she served as a consultant and special helper to the nurses in their community program or county program. It is their duty to consider the foods eaten by the families or members of the family in their respective communities; that she prepared and gave outlines to the public health nurses in the various communities (Tr. 1375).

TABULATION OF KNOWN VITAMINS

Information as to Presence in							
Common Name	Chemical Name	DISEASE ASSOCIATED WITH DEFICIENCY OF	Necessary for	EVAPORATED MILK		MILNOT	
				Amount per Fluid Ounce	Source of Information	Amount per Fluid Ounce	Source of Information
Fat Soluble Vitamins							
Vitamin A	Vitamin A	Ophthalmia Night blindness	Normal vision, resistance to infection, normal skin and lining of internal tissue	138 U. S. P. Units 136 U. S. P. Units	U. S. Dept. of Agr., Technical Bulletin No. 802, Dec. 1941. H. J. Cannon and G. F. Hixon, Industrial and Engineering Chemistry, Sept. 1936.	154 U. S. P. Units (By fortification)	Label disclosure
Carotene may be converted to vitamin A in body.							
Vitamin D	Calciferol	Rickets	Normal utilization of calcium and phosphorus, strong bones	NOTE.—Negligible in milk. Most evaporated milks fortified with Vitamin D at various levels of 8, 25, or 34 U. S. P. Units.	Label Disclosure	34 U. S. P. Units (By fortification)	Label disclosure
Vitamin E	α-Tocopherol	Sterility, muscular dystrophy	Reproduction, cell division, muscle vigor.	Sufficient for normal growth	Anderson, Elvehjem and Gonce, Jour. of Nutrition 20, 433, 1940.	None Vitamin E is fat soluble and goes off with cream. Refined cottonseed oil devoid of vitamins.	Tr. p. 1226 Tr. p. 2616
Choline in the form of phospholipid is fat-soluble, see below for function.							
Vitamin K	Naphthoquinones	Hemorrhagic disease, faulty blood clotting	Normal functioning of liver to allow blood clotting	Sufficient for prevention of hemorrhagic disease of newborn infants.	S. S. Gellis, M. D., and R. A. Lyon, M. D., Jour. of Pediatrics, Oct. 1941.	None Vitamin K is fat soluble and goes off with cream.	Tr. p. 1226
Water Soluble Vitamins							
Vitamin C	Ascorbic acid	Scurvy	Normal blood vessels, healing of wounds	8 U. S. P. Units	Woessner, Elvehjem and Schuette Jour. of Nutrition, Oct., 1940.	No information Presumably present Vitamin C is water soluble	
Vitamin B ₁	Thiamin	Beri-beri, faulty carbohydrate utilization.	Normal production of energy from carbohydrates	16 micrograms 57 International (U. S. P.) Units=17 micrograms	U. S. Department of Agriculture, Technical Bulletin No. 707, Dec. 1939. Tr. p. 1713	6 International (U. S. P.) Units=18 micrograms	Tr. p. 1712
Vitamin B ₂ , G	Riboflavin	Cheilosis	Normal skin, nerve and eyes	104 micrograms 957 micrograms	Todhunter, Jour. of the American Dietetic Ass'n, May, 1932. Tr. p. 1713	1122 micrograms	Tr. p. 1712
Vitamin B ₃	Nicotinic acid	Pellagra	Normal oxidation in tissues	57 micrograms 693 micrograms	Teply, Strong and Elvehjem Jour. of Nutrition, April, 1942. Tr. p. 1713	693 micrograms	Tr. p. 1712
Vitamin B ₆	Pyridoxine	Dermatitis and anemia	Not definitely known	17 micrograms	R. J. Williams, Journal of American Medical Ass'n, May 2, 1942.	No information Presumably present Vitamin B ₆ is water soluble.	
Vitamin B ₅	Calcium pantothenate	Dermatitis	May function in preventing gray hair	2481 micrograms	Tr. p. 1713	2076 micrograms	Tr. p. 1712
Vitamin B ₁₂	Choline chloride	Fatty liver, hemorrhagic kidney	Normal, phospholipid formation.	Present in phospholipins	Tr. p. 1154, 1226, 1458	Present, although at least 50% is lost by removal of cream.	Tr. P. 1004, 1226
	Biotin	Spectacles eye, paralysis	Unknown	5 micrograms	R. J. Williams, Journal of American Medical Ass'n, May 2, 1942.	No information Presumably present Biotin is water soluble.	
	Inositol	Loss of hair	Unknown	835 micrograms	R. J. Williams, Journal of American Medical Ass'n, May 2, 1942.	No information	
	Same	Gray hair	Unknown	Present in whole milk	Tr. p. 1163		

various levels of 8, 25, or
34 U. S. P. Units.

a-Tocopherol	Sterility, muscular dystrophy	Reproduction, cell division, muscle vigor.	Sufficient for normal growth	Anderson, Elvehjem and Gonce, Jour. of Nutrition 20, 433, 1940.	None. Vitamin E is fat soluble and goes off with cream. Refined cottonseed oil devoid of vitamins.	Tr. p. 1226.
Naphthoquinones	Hemorrhagic disease, faulty blood clotting	Normal functioning of liver to allow blood clotting	Sufficient for prevention of hemorrhagic disease of newborn infants.	S. S. Gellis, M. D., and R. A. Lyon, M. D., Jour. of Pediatrics, Oct., 1941.	None. Vitamin K is fat soluble and goes off with cream.	Tr. p. 1226.

Water Soluble Vitamins

Ascorbic acid	Scurvy	Normal blood vessels, healing of wounds.	8 U. S. P. Units	Woessner, Elvehjem and Schuette Jour. of Nutrition, Oct., 1940.	No information. Presumably present. Vitamin C is water soluble.	
Thiamin	Beri-beri, faulty carbohydrate utilization	Normal production of energy from carbohydrates.	16 micrograms	U. S. Department of Agriculture, Technical Bulletin No. 707, Dec., 1939.	6 International (U. S. P.) Units=18 micrograms.	Tr. p. 1712.
			57 International (U. S. P.) Units=17 micrograms.	Tr. p. 1713.		
Riboflavin	Cheilosis	Normal skin, nerve and eyes	104 micrograms	Todhunter, Jour. of the American Dietetics Ass'n, May, 1932.	1122 micrograms	Tr. p. 1712.
			95.7 micrograms	Tr. p. 1713.		
Nicotinic acid	Pellagra	Normal oxidation in tissues	57 micrograms	Teply, Strong and Elvehjem Jour. of Nutrition, April, 1942.	69.3 micrograms	Tr. p. 1712.
			69.3 micrograms	Tr. p. 1713.		
Pyridoxine	Dermatitis and anemia	Not definitely known	17 micrograms*	R. J. Williams, Journal of American Medical Ass'n, May 2, 1942.	No information. Presumably present. Vitamin B ₆ is water soluble.	
Calcium pantothenate	Dermatitis	May function in preventing gray hair	2481 micrograms	Tr. p. 1713.	207.6 micrograms	Tr. p. 1712.
Choline chloride	Fatty liver, hemorrhagic kidney	Normal, phospholipid formation	Present in phospholipins	Tr. p. 1154, 1226, 1458	Present, although at least 50% is lost by removal of cream.	Tr. p. 1004, 1226.
Biotin	Spectacles eye, paralysis	Unknown	5 micrograms*	R. J. Williams, Journal of American Medical Ass'n, May 2, 1942.	No information. Presumably present. Biotin is water soluble.	
Inositol	Loss of hair	Unknown	835 milligrams*	R. J. Williams, Journal of American Medical Ass'n, May 2, 1942.	No information.	
Same	Gray hair	Unknown	Present in whole milk	Tr. p. 1162	No information.	

Recognized, But Not Characterized

			Present in whole milk	Tr. p. 1039, 1162	No information.	
			0085 mg. unit*	R. J. Williams, Journal of American Medical Ass'n, May 2, 1942.	No information.	
			Present in whole milk	Tr. p. 1162	No information.	
			Present in whole milk	Tr. p. 1162	No information.	
			Present in whole milk	Tr. p. 1162	No information.	
			Present in whole milk	Tr. p. 1162	No information.	
			Present in whole milk	Tr. p. 1162	No information.	

* Values by Williams are given for whole milk

"A. Yes, the family is the unit of work in the public health field.

"Q. Are you familiar with the product called Milnot, which consists of hydrogenated cottonseed oil, skimmed milk and Vitamins A and D? A. Yes, I know there is such a product.

"Q. Have you had occasion to look at a can to know what it looks like? A. Yes.

"Q. Would you recommend that from a nutritional standpoint in preference to milk to be used by these families that your program reaches?

"MR. CLARK: I object to that for the reasons that I have heretofore stated with reference to similar questions.

"THE COMMISSIONER: Received subject to the objection.

"Q. (By Mr. Morris): You may answer. A. Well, we recommend the use of whole milk in family feeding or individual diets.

"Q. Why do you do that? A. We feel that whole milk is one of the foods that will bring up a diet that is not adequate in all nutrients to a higher point than any other food that we know about.

"Q. Is the use of milk important to the poor family? A. Yes, it is.

"Q. And why is that true? Why do you say that? A. The family with limited income will need to make every penny spent for food count and it is well if they can purchase the foods, or secure the foods that have the most food value, greater

food value than other foods that might be available, and for that reason we feel that the basic foods, the natural foods, are necessary foods for families of low income.

"Q. And in that program then milk is one of the important natural (Tr. 1376) foods? A. That is right.

"Q. Now, with regard to this program that you carry on, it is purely and simply an educational program to help the ordinary family, the mother, to know more about how to feed her family, is it not? A. Yes, it is. Nutrition is recognized as a phase of preventive medicine and, therefore, we feel that families should be concerned about their food intake." (Tr. 1377.) That the public health service of the state serves the citizens of the state and the service covers the state; that there has been surveys in the state of Kansas with regard to the need for nutritional education; that there were studies carried on in 1933, 1937 and 1940. In the first survey it is found that something like 25 percent, and in the more intensive surveys, it was found that 26 percent to 28 percent of the children in the state of Kansas had poor nutrition. (Tr. 1377.)

"Q. Now, in connection with those surveys, was there any investigation made with regard to the type of foods eaten by the people? A. Yes, that is true.

"Q. What were some of the foods that they found to be deficiently consumed? A. Well, in the last survey, which I think was in 1940, the pediatrician

reported to our division that he believed he found more children showing a shortage of foods rich in nutrients. In other words, if these children had had a good milk supply, these deficiencies that he found would not have been present.

"Q. Who was that individual? A. Dr. Emxign, Paul R. Emsigh.

"Q. *Why do we have defective diets in Kansas and defective nutrition?* A. We feel that there are three reasons for such. *One reason is that there is lack of income; a second reason is that there is a lack of information on the part of people to know just what makes a good diet; and a third reason is inertia, or they do not care.*

"Q. Is this educational program apparently helping to solve this problem? A. I think it is making its mark on people's attitude towards food and the relation of food to health.

"Q. Would the sale of this product make it more difficult to carry on your program and get the people to use the type of food that you recommend for nutrition?

"MR. CLARK: I object to that for the reasons that I have stated.

"THE COMMISSION: She may answer.

"A. I think that people should use natural food, as I stated before, and I believe that in the best interests of health that they should consume or use in their homes *whole milk products*, and I think that (Tr. 1378) *any program that would help the*

people to select these natural foods without confusion is a good program, that it is carrying our work one step farther if we can prevent our people from becoming confused when it comes down to purchasing or selecting foods for family consumption.

Q. What do you mean by 'confusion,' that this product would confuse them as to— A. (Interrupting). Yes, they might become confused.

Q. Why do you say that? A. Well, the consumer doesn't read his labels. He doesn't always know what he is buying, and that is one of the problems of our service, is to get people to understand thoroughly what they are buying, and back of that, to know what they should have.

Q. Where they do read the labels, do you find that they understand? A. Not always.

Q. Would this problem of inertia that you spoke of a while ago as one of the factors that resulted in defective nutrition have anything to do with your educational program where a product such as this was on the market? A. I would think so.

Q. Have you found that to be true in regard to the purchase of foods? A. Yes.

Q. Do your public nurses have any duties to perform with respect to the prenatal care and the care of children? A. Yes, that is part of their program.

Q. In carrying out this program, do you have a problem as to what can be purchased by the family as well as what should be purchased? A. Yes.

Q. In other words, you in your work have to consider the economic (Tr. 1379) question as well as the question of nutrition? A. That is right.

Q. Would you say it is advisable for people with a limited income from purely an economic standpoint to purchase a product such as Milnot in preference to whole milk?

A. We feel that money spent for whole milk is a better investment in health than for any other type of milk product.

Q. (By Mr. Morris): Why do you say that?
A. Because milk is an all-around growth food. It is the natural food for young children. If any part of this product has been removed or has been altered in any way, I think that it is hard to supply the elements or nutrients necessary for growth. (Tr. 1380.)

Plaintiff's "Exhibit FF" is a compilation of material having to do with nutrition and family feeding for use of home-makers, published by the State of Kansas Nutrition Service of the Child Hygiene Division of the Kansas State Board of Health was offered in evidence (Tr. 1386 to 1387). This exhibit, compiled by the witness under the supervision and consultation of Dr. Ross, stated on page 2:

EXHIBIT FF

"MILK. Every member of your family should have milk in some form every day. No other single food has as much to offer to good health as milk and its products. Milk makes strong bones and teeth and helps to build flesh and keep it firm and strong. Children need it for growth. Pregnant and nursing mothers must have milk to protect their health. Men and women need milk to maintain their health. Milk is economical. It provides health-giving substances at a low cost as compared with the cost of obtaining them in other foods. The less you have to spend for food the more important is milk in your meals.

"Milk produced at home should come from healthy animals. Boiling milk makes it safe for the whole family. Milk should be kept covered and cool. Different forms of milk may be used including fresh whole or skimmed, evaporated (not sweetened) and milk powder.

"*Evaporated Milk*, when mixed with an equal amount of water has the same food value as fresh whole milk. Sometimes, if you need to buy milk, you will find this cheaper than the fresh milk. This milk, after opening the can, should have the same care as fresh milk. Some

evaporated milk has been reinforced by adding extra vitamins. Such cans have the word 'irradiated' on the label."

GEORGIANA H. SMURTHWAITE

GEORGIANA H. SMURTHWAITE, a witness for Plaintiff, testified that she lived in Manhattan, Kansas, was State Home Demonstrator, employed by the Kansas State College Extension Service, which department is supported by state and federal funds, and the department is under supervision and review by the Federal representative; that she was a graduate of the Utah State College of Agriculture, attended Columbia University and had a Master of Science degree from the Kansas State College; that she had had experience as a nutrition specialist and as a home economics teacher and as a home demonstrator agent; that her major field was nutritionist; that she had two nutritionists working under her (Tr. 1364, 1365); that she carried on an educational program over the state with regard to nutrition; that the Extension Service has in every county organized groups of women; that their nutritionists met with these leaders and trained them in subject matter and they in turn go back to their groups and endeavor

to get the members of their groups to put into practice the information the nutritionists give the leaders. This work is carried on in one hundred and three counties in Kansas. The work is carried on in rural areas, including cities with a population up to 2500. The purpose of this program is to teach women to provide health for their families and more attractive and comfortable homes; that for sixteen years the witness had been engaged in educational work relative to nutrition in Kansas (Tr. 1366); that she understood the Carolene Products Company products to contain skimmed milk; hydrogenated cottonseed oil and Vitamins A and D. (Tr. 1367.)

“Q. Did the sale of such product make your nutritional educational program more difficult? A. We recommend whole milk in our program.

“Q. Why do you do that? A. Because it contains growth promoting factors which will assure better health for growing boys and girls.

“Q. (By Mr. Morris): Could this nutritional or growth-promoting factor in whole milk be supplied as economically in any other way than in whole milk in your opinion?

“MR. CLARK: If the Commissioner please, I object to that. This witness hasn't shown herself to be qualified to pass upon the economics of this question, and it is wholly immaterial anyway.

"THE COMMISSIONER: She may answer. A. I think it is the most economical source of the growth promoting factor.

"Q. (By Mr. Morris): Why do you say that? A. Well, if we give some other form of food, we will have to buy the growth promoting factors in addition and, therefore, I think it is cheaper to buy whole milk in the first place.

"Q. Are there any other food or foods that supply these growth promoting factors you speak of? A. I don't know of any.

"Q. Do you think that whole milk is essential to a normal diet for an infant and child? A. Yes. When the child is first born, the child is given whole milk and then is continued on this food along with other foods until it receives its full development; at least, that is our recommendation.

"Q. Now, when you go out and carry on your educational program, do you make out various diets and that sort of thing for the family and recommend various diets for the family? A. We do not make diets for the family but we teach the family to select their food wisely, which means that they will select the food that will provide for them adequate diets." (Tr. 1368, 1369.)

Witness testified that the Extension Service had a means of checking the kinds of food the people were selecting, which is called a Food Selection Score Card; that they are taught how to use this device and the

Extension Service gets regular reports from time to time which reveal whether or not they are selecting the proper type of foods, and if not, emphasizes is placed upon the proper selection of foods. (Tr. 1369.)

"Q. Now, would the sale of this type of product that I have mentioned here, Milnot, aid or hinder your educational program in carrying to the people of this state the method of a proper diet?

"MR. CLARK: I object for the reasons I have stated, and for the further reason that there is no qualification shown for the expression of such an opinion, and for the further reason that such an opinion is immaterial to any issue in this case anyway.

"THE COMMISSIONER: She may answer subject to the objection. A. We find that it is easier to get people to eat the right kind of food when the simple, natural foods are kept before them and their attention is called to their food values. The introduction of food of this sort would necessitate our teaching the people what they could do to make up the deficiencies.

"Q. (By Mr. Morris): Does evaporated whole milk have an important place in your program? A. Of course, we work with mostly rural people and we expect the people to have their own fluid milk, but we would accept evaporated skimmed milk in lieu of this product.

"MR. CLARK: I move that the latter part of that answer be stricken as not responsive; and, furthermore, it is immaterial to any issue.

"THE COMMISSIONER: Overruled.

"Q. (By Mr. Morris): Would you say it is advisable for people with a limited income from an economic standpoint to purchase skimmed milk in preference to whole milk? A. I think that people should buy whole milk, then we would recommend that they buy the maximum amount of whole milk and buy skimmed milk to make up the difference.

"Q. Would this product Milnot serve any useful purpose in your program? A. I can't see any point to using it when fresh milk is so superior. (Tr. 1371.)

"THE COMMISSIONER: She may answer that.

"A. Well, it would mean that, if it is sold, that we will have to teach the people what to buy to make up the difference.

"Q. (By Mr. Morris): Assuming that a product is susceptible to being used as a substitute for another product such as milk, would that problem of education as to the deficiencies of the substitute product be a difficult one?

"MR. CLARK: Now, I object to that, if the Court please, for the reason that I have stated and for the further reason that the question assumes that there are deficiencies which this witness hasn't testified to.

"THE COMMISSIONER: She may answer subject to the objection. A. Anything that complicates the selection of food makes the problem a difficult one and that would complicate the problem.

"Q. What are some of the problems you find in your educational work with regard to getting people to follow advice and use various types of food?

A. Well, people have a habit of eating certain foods and they have a tendency to stay with those foods.

"Q. What part do the factors of ignorance or inertia or income play in your problem? A. We are told that one-third of our people do not have enough money to buy the right kind of food, so income plays an important part, and we have to teach those people how to buy the best with their money and how to take advantage of any program that will provide them additional food. People are ignorant (Tr. 1372) to a large extent of the foods that they should have, and that is one of the reasons that our program is set up, so that we can teach people how to select the right kind of food and how to buy the right kind of food.

"Q. Do you find any lack of interest or inertia that you have to cope with? A. One of the reasons that so many people are malnourished is because of inertia, and so we have to overcome this inertia by stimulating their interest and teaching them how to judge wisely of food.

"Q. Then if it is easier for them to buy a product like Milnut that is on the market, they might buy it in preference to milk, even though they know better, because of lack of any interest in it? A. If they knew better, they wouldn't buy it in preference to milk, but if they didn't know better, they might buy it. *I don't think most people know what they are buying when they buy foods.*" (Tr. 1373)

Fraud and Deception

P. R. WOODBURY

P. R. WOODBURY testified on behalf of the plaintiff that he called upon the Blum Market in Ottawa, Kansas, on the 16th day of September, 1940, and in response to being asked what he did, Mr. Woodbury testified:

"A. I went into the Blum Market in Ottawa and asked a clerk if he had some cheap canned milk. He replied, 'Yes, sir, three for a dime,' and showed me small cans of Carnation and Milnut on the same shelf marked 'Three for 10c,' and stated that they were both good milk." (Tr. 1397.)

That on the 17th of September, 1940, he called upon Kraft Market at Paola, Kansas, about 10:30 in the morning and inquired of the clerk if they had any cheap milk, to which the clerk replied they did and showed the witness a small can of Milnut at 4c or three for 10c, all displayed along with other brands of milk. The clerk made out a receipt reciting, "Canned milk" (Tr. 1399); that on the 17th of September, 1940, he called on the Whiteside Grocery and Market at Ft. Scott and asked for cheap canned milk. A clerk showed him Armours and several other brands and along beside the

cans of milk in the same section of the case, several cans of Milnut. The clerk picked it up and said it wasn't exactly milk. She gave the witness a receipt for the can he purchased, reciting, "Cooking milk." (Tr. 1400.) On the 17th of September, he called upon the Mabe Market, Paola, Kansas, and asked the clerk if he had any cheap canned milk. The witness testified:

"He answered, 'Yes, sir, four for a quarter,' and reached on the shelf where canned milk and Carolene was displayed and handed me a can. I said, I would take four cans of that and he gave me four cans of Carolene. I gave him 26¢ and asked for a bill and he made it out, 'Milk, 25¢, tax, 1¢, Paid.'"

This was a can containing coconut oil; that he called upon the grocery store operated by Mrs. Kross in Topeka in the fall of 1941 and purchased some Milnot and saw some advertisement which was a handbill that was lying on the counter in the store. It advertised what was intended for Milnot. However, it was misspelled, but recited: "Minots Milk per can, 7¢" (Tr. 1401, 1402)

On the 16th day of September, 1940, he called upon the Karbe Grocery at Ottawa, Kansas, and asked the clerk for some cheap canned milk; that the clerk showed him Armours, Carnation, and then picked up a can of Milnut which was displayed on the same shelf as Ar-

mours' milk. The clerk read from the label that it was a compound made from refined skimmed milk and cottonseed oil. The witness asked if it was sold as milk and the clerk replied it was not. Upon a purchase of the can, the clerk made out a receipt reciting: "Milk, 8c" (Tr. 1403). On the 18th day of September, 1940, he called upon the Jamison Grocery in Pittsburg and asked the clerk for some cheap canned milk. The clerk told him they had cheap milk and that it was good milk; and showed him a display of Pet and Carnation, between which Milnut was displayed. He stated it was a good milk and that it was a kind of mixture (Tr. 1404); that he called on the Morgan Cash and Carry Grocery in Ft. Scott, Kansas, on September 17, 1940, and asked a clerk if they had any cheap canned milk. He testified:

"She told me they did, and picked up several cans. It was eight cents or four for 25¢. She also showed me the small cans of Milnut at three for 10¢. I inquired if it was good milk. She told me it sure was, she sold lots of it."

The clerk made out a ticket reading: "Milk Compound, 8c."

The witness took a picture of a sign on a window, which was introduced as Plaintiff's "Exhibit HH" (Tr.

1410); that the product he bought inside was four for 25¢ and the milk was advertised on the outside four for 25¢, and when he went in and called for cheap milk, they sold him Milnut, four for 25¢; that on the inside of the store, milk was marked "Four for 25¢" and Milnut was in this display of milk. (Tr. 1411). He called upon the Robbins Store in Leavenworth, September 24, 1940, and asked the clerk for some cheap canned milk. The witness testified as follows:

"He said, 'We have this, sir, four cans for a quarter,' and picked up a can of Milnut. I told him I would take two cans and gave him fifteen cents."

The receipt given for the milk recited, "Canned milk, paid." The Milnut was quite well displayed in the store (Tr. 1411); that on the 18th day of September, 1940, he called on the Karbe Store in Chanute, Kansas, and went into the store and located the displayed canned milk, over which there was a sign, "Three for 19¢." There was Carnation, Pet, Boren's, Pickwick and Carolene. No clerk waited on the witness, but he picked up three cans of Carolene and presented them to the cashier, asking for a receipt, and the clerk made out a receipt, reciting, "Milk, 19¢" (Tr. 1411-1412); that he called

upon the Family Food Market on East 6th Street in Topeka, September 20, 1940, and asked a clerk for some cheap canned milk. The clerk directed the witness to where several brands of milk and Milnut were displayed (Tr. 1412); that on the 20th of September, 1940, the Witness called upon the Gem Market in Topeka and asked for some cheap canned milk and he was directed to the display on the shelves and between the brands of Carnation and Pet was a display of Carolene. The clerk told the witness that "Carolene milk" was the same price. The receipt given for the purchase recited, "Carolene milk, 20¢." On the 20th of September, 1940, he called at the Exchange Grocery in Topeka. On the shelf several brands of milk and Carolene were displayed together. The clerk picked up Carolene and said, "We have this one for 6¢." (Tr. 1413.) On September 25, 1940, the witness went into a store at Leavenworth, known as the Dorn Cash Food Market. Carolene and standard brands of milk were displayed on the shelf. The witness asked if Carolene was a "good milk" and was told that it was (Tr. 1414). On September 25, 1940, at Wathena, Kansas, the witness called upon the Beaty store and told the clerk he wanted just a cheap milk, and the clerk picked up Milnut and asked the

Witness "How many?" (Tr. 1414.) On the 25th of September, 1940, at the Red & White Store, at Atchison, the witness asked a lady clerk for some cheap canned milk and she went to the shelf where Milnut was displayed, marked "Three for 20¢" and handed the witness a can. Milnut was here displayed with other nationally known brands of milk (Tr. 1315). On the same date the witness called upon the Gray's Cut-Rate Grocery in Atchison, asking for cheap canned milk. A lady clerk told the witness they had Milnut for 6¢, and picked up a can from the shelf where it was displayed. Holding it in her hands, she said, "Or we have Swift's or Armour's at four for 25¢." (Tr. 1415.) On the same date he called upon the Beauty store No. 24 at Troy, Kansas, and asked the lady clerk for some cheap canned milk. On the shelf on display to equal advantage was Milnut, together with Carnation and Libby's. The clerk picked up a can of Milnut and handed it to the witness. (Tr. 1415.) On the 26th of September, in the Mission Market at Horton, Kansas, the witness asked a clerk for cheap canned milk. The witness was asked the size of the can desired, then the clerk went directly to the shelf where Milnut was displayed with cans of regular milk and picked up a can of Milnut and the witness re-

ceived from the clerk a sales ticket reciting, "Two large milk, 15¢." On the 26th of September, 1940, the witness called upon the Schroff's Grocery at Hiawatha, Kansas, asking for a cheap canned milk. The clerk took the witness to where regular canned milk and Carolene were displayed. The witness said Carolene milk was 9¢ a can and upon purchase by the witness, he was given a receipt reciting, "Milk, 9¢, Paid." Carolene and Milnut were on display together in the store. On the 26th of September, at the Beaty's store No. 77 in Hiawatha, the witness was told by the clerk that a can of Milnut which the clerk picked up from a display on the floor, was "good milk" and they sold a lot of it. The witness took two cans and was given a receipt therefor reciting, "Milk, 12¢, Paid." (Tr. 1417.) On the 26th day of September, 1940, the witness went into the Washburn Grocery at Sabetha and asked the lady clerk for some cheap canned milk. She advised the witness that they had Milnut for 7¢, Carnation, two for 15¢ and Pages, which was higher, all were displayed in the same section of the shelving and marked. Upon purchasing a can of Milnut, the clerk made out a bill reciting, "Milk, 7¢, Paid." (Tr. 1417.) On the 26th day of September, 1940, the witness went to the Beaty store in Sabetha and

called for some cheap canned milk, and the clerk stated to him that the only thing he had was Milnut and Libby's (Tr. 1417). On the 27th day of September, 1940, he went into the Corner Grocery at Holton and asked for cheap milk. The clerk went to the shelf where Milnut was displayed at "Three for 20¢." Carnation milk was also on the same shelf. The clerk picked up Milnut and handed it to the witness (Tr. 1418).

That the work above recited was done prior to the filing of the present lawsuit; that during 1941 the witness went to retail grocery stores in the territory at the request of the Department, to advise them not to sell the product, and discussed the question with various managers of stores in his territory; that as a result of those discussions, a number of stores ceased selling the product; that some of the stores claimed to have received communications from the Company regarding its sale and some of them continued to sell after his warning; that during the past year the stores displayed the Defendant's product along with canned milk, unless it was featured in the center of the floor by itself, but in that event, the rest of the stock of the product would be along with the other canned milks (Tr. 1419); that he had gone out and taken statements from

a number of consumers; that the list of persons about whom he testified as called upon, contained all except two of the groceries upon whom he called. He took about twenty-five consumers' statements (Tr. 1420):

The witness was asked to state from his investigation of consumers who had used the product, what he found with regard to the question as to whether the consumers knew what they were buying or what they bought it for, and whether they knew they were buying a substitute for milk, or whether they thought they were buying milk. The Commissioner sustained an objection to the question on the ground that it was hearsay, but permitted offer of proof of Plaintiff, and the witness testified:

"A. I believe that I found that there was quite a wide variation in what they bought it for and what they thought they were buying. Some thought they were buying a milk, some a cream. Some said they knew what they were buying. Some read the label and some knew what was on it. Others didn't. To summarize it, I would say that I believe that over half of them that bought it, at least half thought they were buying milk when they bought it. Does that answer your question?" (Tr. 1422.)

He further testified: "I would say that less than half of them said they had read the label and knew what was on it." (Tr. 1423.)

That the witness called upon the stores under instructions to see what stores were selling the product, how it was displayed, the price they were selling it for and to find out how it was used. (Tr. 1429.)

P. R. WOODBURY, recalled as a witness for Plaintiff, testified that Plaintiff's "Exhibit JJ" was a sales ticket given to him by Mrs. Fountain on the 28th of October, which, among other things, recited, "Milk, 15¢." and that Mrs. Minnie Fountain stated she received it October 25 from the North Topeka Market when she purchased Milnut.

The witness further testified that the day of his testimony he had purchased a can of Milnot, a can of Carnation and a can of Pet milk in Topeka, Kansas. He poured the contents of each of the cans from Pet, Carnation and Milnot into three glasses. (Tr. 1600.)

"Q. Will you open it up and pour it in there?" (Witness complies.)

"Mr. Woodbury, you have poured some milk from a can of Pet; you have poured some of the product from a can of Milnot; and some milk from a can of Carnation in three separate glasses there, have you not? A. Yes.

"Q. Do you notice any difference in the color of those three? A. I would say there is practically

no difference, as far as I can see. There might be a very slight difference.

"Q. What difference between what products? A. Possibly it is the way the light shows on it. If there is anything, I would say the Pet might be a little lighter in color. I believe I would say that I can see no difference.

"Q. Have you tasted those today, a similar can to these here? A. Yes, I did.

"Q. That you purchased today of each one? A. Yes, sir.

"Q. How about the taste of them or—

MR. LILLARD: We object to the gentleman's taste. It is irrelevant and immaterial.

MR. VEALE: It calls for a conclusion of the witness.

"THE COMMISSIONER: He may answer.

"A. As to taste, I don't believe that I would be able to distinguish them if they were mixed up and interchanged.

.Q. (By Mr. Morris): How about the odor or smell that they may have? A. I believe you will have an odor in the Pet and the Carnation that is not as strong as the odor in the Milnot, but still very close." (Tr. 1600, 1601.)

NEWSPAPER ADVERTISEMENTS

Plaintiff introduced newspaper advertisements of this product under agreement between counsel, that no proof as to publication and circulation be made.

"MR. MORRIS: While we are waiting for that, if the Court please, I might introduce some newspaper advertisements here. I think that Mr. Clark and I have agreed that there will be no objection to the introduction of these from the standpoint—

"MR. CLARK (Interrupting): Of publication and circulation.

"MR. MORRIS: Circulation, etc.

"MR. CLARK: That applied also to the ones that I offered in evidence.

"MR. MORRIS: Yes. The Salina Journal, Thursday, February 27, 1941, contains an ad of the Dillon Mercantile Company, Seventh and Walnut Street store, in which appear the words, 'Milnut, So rich it whips, 10 tall cans 25¢.' In the Salina Journal of Friday, February 28, 1941, appears an ad of the Dillon Mercantile Company reading, 'Correction—Through a typographical error the following item appeared in our ad last night—Milnut, So rich it whips, 10 tall cans 25¢. It Should have Read—Milnut, So rich it whips, 10 tall cans 59¢.'

"MR. CLARK: I thought they had read—

"MR. MORRIS (Interrupting): I just read it because they failed to make the proper correction.

"The Wellington (Kansas) Daily News, Tues-

day, October 3, 1940, contains an ad of the Nation's store; at the bottom of the ad appears the following, 'Milk—Milnut, It Whips—per can 5¢.' (Tr. 1432.)

"In the Holton (Kan.) Recorder, October 10, 1940, appears an ad of the Corner Grocery. Among the items is, 'MILNUT. Use it like evaporated milk, in coffee or in cooking. 3 Tall Cans 19¢.'

"MR. CLARK: May I interrupt you there? It is understood that my objection—

"THE COMMISSIONER: Wait until he makes all of the offer and object to all of them at once. That would be my suggestion about it.

"MR. MORRIS (Continuing): In the Wichita Beacon, Friday, August 9, 1940, an ad of the Big 3 Food Mart appears, with the following, 'Milnut, So Rich It Whips, Tall Can 5¢.'

"In the Daily Messenger and News, Caldwell, Kansas, August 12, 1940, Food System, appears the item, 'Milk, Caroline Brand, 4 Tall Cans, 23¢.'

"In the Wellington (Kansas) Daily News, October 17, 1940, under the Nation's store ad, appears the item, 'Milk, Milnut, It Whips, 3 cans 17¢.'

"In the Holton (Kansas) Recorder, Thursday, March 27, 1941, under the ad of the Corner Grocery, appears an ad reading as follows, with large letters across the top, 'Carnation Milk, 3 Tall Cans 20¢; Milnot, 4 Tall Cans 25¢.'

"In the Barber County Index, Medicine Lodge, Kansas, under date of February 27, 1941, appears in the ad of R. E. Trayis Food Store, 'Milnut Milk, Large Cans, 4 for 25¢.'

"In the Barber County Index for March 6, 1941, under the R. E. Travis Food Store ad appears the reading, 'Milnut Canned Milk, Large Can 6¢.'

"In the Salina Sun, Thursday, November 6, 1941, appears an (Tr. 1433) ad of the Bungalow Market containing the statement, 'Milnot, It Whips, 4 Tall Cans 27¢.'

"In the Evening Kansas-Republican, Newton, Kansas, Thursday, June 12, 1941, under the Superior Newton Market ad appears, 'So Rich It Whips, Milnot, Tall Can 6¢.'

"The Junction City Union, Thursday Evening, November 13, 1941, contains an ad of the Peter Pan store reading, 'Milnut, 4 tall cans 28¢.'

"The Lamont Leader, published at Lamont, Greenwood County, Kansas, under date of March 4 1942, contains an ad of the People's Super Market in which the words 'Carolene, so rich it whips, 4 tall cans 29¢' appear.

"In the Daily Messenger and News, Caldwell, Kansas, Thursday, July 25, 1940, under the ad of the Food System appears 'Milk, Caroline Brand, 4 Tall Cans 25¢.'

"In the Daily Messenger and News, Caldwell, Kansas, June 17, 1940, under the Food System ad, appears 'Milk, Caroline Brand, 4 large cans 25¢, 12 cans 69¢.'

"In the Wichita Beacon, June 13, 1941, an ad of Ladd's Food Market contains the following, 'Milnot, So Rich It Whips, 4 Tall Cans, 25¢.'

"The Hayes Cash Grocery & Market at Virgil, Kansas, contains an ad, 'Carolene, it whips, 3 cans 25¢.'

"The Daily Messenger and News, Caldwell, Kansas, July 1, 1940, contains an ad of the Food System store reading, 'Milk—Carolene, 4 lge. cans, 25¢; 12 cans 69¢.'

"The Daily Messenger and News, Caldwell, Kansas, August 1, 1940, contains an ad of the Food System market reading, 'Milk, (Tr. 1434) Caroline, 3 large cans 23¢. Another 1¢.'

"The Jackson County Signal, Holton, Kansas, March 27, 1941, contains an ad of the Corner Grocery in which appears the following, 'Milnot, 4 Tall Cans 25¢.' Just above it appears, 'Carnation Milk, 3 Tall Cans 20¢.'

"MR. CLARK: But they are separated—in fairness say that the Carnation and Milnot ads. are separated by lines. Each one is blocked out in a separate block.

"MR. MORRIS: That is true. The Wichita Independent, Friday August 2, 1940, contains an ad of the Air Capital Market in which appears the following, 'Milnut, So Rich It Whips, Tall Can 5¢.'

"I have here a circular letter sent out by the F. & E. Wholesale Grocery Company of Wichita to various retailers. This one was sent to Hays Fruit Market at Hays, Kansas. This does not contain the date on it, but—oh, yes, it says, 'Prices are Good from Feb. 16 to Feb. 28 Inclusive.' That was 1942. It doesn't say on there it was 1942, but I am stating it was 1942 because I know thereafter is when it was received.

"MR. CLARK: You are going to testify a little bit yourself?

"MR. MORRIS: That is what it amounts to. It contains a notice of cost to retailers per case and a certain special offer, and I want to offer that in evidence. Any objection?"

"MR. CLARK: I am going to object to the whole thing when you have finished.

"MR. MORRIS: It reads, 'Special Free Deal!!! MILNOT One Case Free with Nine Cases. 48 No. 1 Tall, case 3.27—3.30. This makes Your Net Cost 2.94 case 2.97.' I presume that means \$3.27 to \$3.30 and this makes your net cost \$2.94 a case or \$2.97. I offer (Tr. 1435) that in evidence.

"Then as of the date of January 5th to January 17th, which was put out for 1942—this particular one went to the Hays Fruit Market, Hays, Kansas, from the F. & E. Wholesale Grocery Company, Wichita, Kansas—there is an ad, with regard to Milnot, showing a can of Milnot and reading, 'MILNOT. It's So Rich It Whips. Case 48 No. 1 Tall Cans. 3.27—3.30.' I offer that in evidence.

"MR. CLARK: If the Court please, on behalf of the Carolene Products Company I object to the offer of these various advertisements in evidence. If the advertisements be construed, any of them, as misleading, it would not be binding on the Carolene Products Company, the manufacturer of this product. It does not afford any evidence of a rational basis for a statute such as the one in question here.

"THE COMMISSIONER: Received subject to the
objection.

"MR. VEALE: We object to it as incompetent, irrelevant and immaterial, and hearsay." (Tr. 1436.)

Plaintiff's "Exhibit II," being a photograph of Milnut, along with a display of Carnation and Armour's milk in the window of George House's grocery at 300 Kansas Avenue, Topeka, Kansas, on the 13th day of June, 1941. (Tr. 1437.)

PLAINTIFF'S EXHIBIT II (Tr. 1437)



HOMER BALDWIN

HOMER BALDWIN, Witness for Plaintiff, testified as follows:

"Q. What other kind do you refer to that it keeps better than? A. Well, any other kind of canned stuff there is there to use, canned milk, but when I go to buy the Carnation milk, it will just sour on me, *and this cream here*, (referring to Milnot) it will keep a whole lot better than the Carnation.

"Q. You mean this cream here (indicating)? A. Yes.

"Q. Do you remmeber reading all the statements on this can? A. I don't remember reading them all.

"Q. Can you tell me all the ingredients in this? (Tr. 1514.) A. I just opened it and used it and never looked at it." (Tr. 1515.)

MRS. J. L. SMITH

MRS. J. L. SMITH, a witness for Plaintiff, testified:

"Q. Now, how did you first become acquainted with the product? A. *Well, I just called for milk and I usually bought the cheaper grade of milk because I used it just for cooking and that was cheaper milk on the market than the other and it is just as good as the other milk in that way.*

"Q. In other words, you bought it in order to get a cheap milk? A. Yes, for one thing, yes." (Tr. 1521-1522.)

MRS. ED. HAMILTON

MRS. ED. HAMILTON, a witness for the Plaintiff, testified as follows:

"Q. (By Mr. Morris): I will ask you another question, Mrs. Hamilton, to refresh your recollection. Did you tell Mr. Woodbury that you normally made out a list for the groceryman and sent the children down there and that you would ask for a can of whipping cream and that Mr. Davis would know what you wanted? A. Yes, sir.

"Q. And did you on different occasions ask for whipping cream when you sent down a list and these children would bring you back this product? A. Yes, sir. I have just written down, 'Send me a can of cream,' and he would know what I wanted. I could have wrote out the whole thing, I guess, but I didn't." (Tr. 1530.)

MRS. R. D. HAMMER

MRS. R. D. HAMMER, witness for the Plaintiff, testified:

"Q. In other words, you thought you were getting a canned milk together with something else in there to make it whip? A. That is what I was told." (Tr. 1535.)

MRS. DORSEY LINCH

MRS. DORSEY LINCH, a witness for Plaintiff, testified:

"Q. Do you at this time use any milk products in your home? A. Yes.

"Q. What are you using? A. I bought a case of that before they let it go out.

"Q. What brand did you buy, do you mean? A. Milnut or Milnot, I don't know just which it is."

"Q. Who called it to your attention at that time? A. Nobody. I just saw it sitting on the shelf and it said that it whipped and I had been using Armour's for whipping purposes and so I got that and it whipped better so I used it." (Tr. 1537.)

HARVEY LINCH

HARVEY LINCH, a witness for Plaintiff, testified:

"Q. Do you buy any canned milk for use in your home? A. Yes, I buy canned milk.

"Q. What brands do you use? A. Well, I did, up until just a little before Christmas use that there, what you have got there. *That Milnot.*"

MRS. W. T. HANNAH

MRS. W. T. HANNAH, a witness for Plaintiff, testified:

"Q. Do you use any canned milk in your home?

A. Just Milnot.

"Q. Did you think you were buying milk when you purchased this? A. Well in a way, yes. I knew it wasn't really milk, but that was what I was buying it for, was to take the place of canned milk.

"Q. Now, assume for the purpose of this question that you could buy this product or Carnation milk, for instance, canned milk, for identically the same price, and assume further that it would be a fact that this product did not contain as much food value as a can of Carnation milk, canned milk, would you continue to buy this product in preference to canned milk? A. I would.

"Q. Ma'am? A. Yes, I would." (Tr. 1542-1543.)

Defendant's Recipe Booklet

Defendant's "Exhibit 11" introduced through Defendant's witness, Melvin Hauser, is a recipe booklet entitled, "Sixty New Recipes for Milnot." This booklet contains sixty recipes, in all of which Defendant's product is used as an ingredient instead of milk or cream.

At page 23 a recipe is given for "Boston Cream Pie"; at p. 25, for "Cream Pie"; at p. 27, for "Strawberry Ice-

cream", and at p. 30, for "Creamy Fudge." On the back of this booklet appear the words, "What every homemaker should know about Milnot", under which the following appears:

"Milnot can be used for all culinary purposes wherever you now use whole milk, cream, whipping cream or a canned milk."

In connection with the testimony as to the use of Defendant's product, Defendants' witness, Grace Vyall Gray, testified as follows:

"Q. Have you used this for any purpose for which you could not use whole milk or evaporated milk? A. No. You get better results from Milnot in soups and sauces, white sauce and cream sauce are much better.

"Q. In other words, you can use this any place where you would otherwise use evaporated milk or whole milk? A. That is right, but, you know, it is cheaper." (Tr. 334.)

HARRY DODGE

HARRY DODGE, called as a witness for the Plaintiff, testified that "Exhibit KK" gives a picture of the dairy industry in the state of Kansas and the economic size of it and the number of farms devoted to farming in Kansas and those devoted to the dairy industry, and the income from each branch. Plaintiff's "Exhibit KK" was admitted in evidence. (Tr. 1546.)

EXHIBIT KK

DATE REGARDING THE DAIRY INDUSTRY IN KANSAS

1. Total number of Kansas Farms, April 1, 1940. (1).....	156.3
2. Total acres in farms April 1, 1940. (4).....	48,173.6
3. Total value of farms April 1, 1940. (1).....	\$1,421,387.4
4. Farms reporting milk produced 1939, 76% of total. (1).....	129.2
5. Number of Dairy Farms, i.e., farms securing 57.8% or more of their farm income from dairying 1940. (1).....	11.5
6. Acres required for dairying 1940. (Est.) (4).....	8,400.0
7. Taxes paid on these acres 1941. (State Tax Commission).....	\$3,402.0
8. Number of cows and heifers two years old and over kept for milk, January 1, 1942. (2).....	786.0
9. People living on farms and partly dependent on income from dairying. (Est. 3.75 per farm.) (1).....	484.5
10. Licensed Dairy Manufacturing plants and buying stations 1941. (4).....	
Cream Stations	1.6
Cream Brokerages	2
Creameries	
Ice Cream Mfgs. }	3
Pasteurizing Plants }	
Cheese Factories	
Condenseries	
11. Total number of Manufacturing plants and stations.....	2.3
12. People engaged by manufacturing plants. (Est.).....	2.5
13. Producer distributors of milk. (Est.) (4).....	6.0
14. Cream Buyers. (Stations and Brokerages) 1941.....	3.7
15. Milk Produced on farms 1940 (4). Pounds.....	3,030,000.0
16. Total value of milk produced on farms 1940 (4).....	\$40,905.0
17. Butter produced; pounds 1940. (4).....	75,806.1
18. Feed cost of producing one pound fat 1939. (3).....	
19. Everybody young and old is a consumer of dairy products.	

INVESTMENT IN DAIRYING

<i>Production.</i>	
8,400,000 acres land and buildings. (4).....	\$247,800.0
786,000 Dairy Cows and Heifers over two years old (2) 1941....	\$57,378.0
Manufacturing plants (Estimated) (4).....	\$10,000.0
Cream Stations and Brokerages	\$500.0
Total Investment	\$315,678.0

References

- (1) From U. S. Agricultural Census, 1940.
- (2) From U. S. Bureau of Agricultural Economics.
- (3) Agricultural Statistics, 1941, United States Department of Agriculture.
- (4) Report, Kansas State Board of Agriculture.

"Q. Then milk or cream sold on the market in Kansas is required to meet certain tests as to sanitation and quality? A. Yes.

"Q. Is the sanitation and quality of milk produced and sold by Kansas dairymen affected by the economic condition of the dairymen? A. Yes, our experience has been that when the price is low, we can't get these men to fix their places up or buy the equipment necessary or go to the trouble necessary to produce a good article. I think that has been the experience everywhere that when the price is low, when they do not get a good price for their milk, that the sanitary conditions are bad.

"Q. Was that especially called to your attention during the period of this last depression? A. Yes. I might say that the Federal Government even went so far as to put in the milk marketing areas where they fix the price on milk—for instance, Topeka is one and Wichita is one, Kansas City, Kansas, and Kansas City, Missouri; Leavenworth is another one—where they arbitrarily fix the price that the producer gets, and the reason back of that was that the producer must get a good price for his product if he is going to deliver a sanitary product.

"Q. Does that have anything to do with the quality of the milk produced? A. Everything. That is the reason for set-ups like the Federal set-up

that I just spoke about, and it has been our experience other places, in small towns where they have got to sell milk for a nickle a quart, you can't get them to produce a good sanitary product.

"Q. Does the type of food fed the animal have anything to do with the quality of milk produced?"

A. The type of food fed to the animal?

"Q. Yes. A. Oh, yes, yes.

"Q. Now, if the dairy farmer is not economically in sound condition, is the type of food fed to the animal affected, in your experience? A. Yes, if he couldn't feed the animal properly, the product would eventually not be up to standard, I would say.

"Q. Have you found cases where you have condemned milk, where it wasn't up to standard because of the quality of the milk produced? A. We have condemned a lot of milk that wasn't up to standard for one reason or another, yes.

"Q. Then from your experience you find that the quality of milk placed on the market would be better if the dairy farmer was enjoying a profitable market for his product? A. That is our experience, yes.

"Q. If filled milk could be sold lawfully would it tend to destroy a profitable market for the dairy farmer in Kansas?" (Tr. 1550, 1551.)

"Q. I asked that if filled milk could be sold lawfully, would it tend to destroy a profitable market for the dairy farmer? A. I would say it would, yes.

"Q. Will you enlarge upon that? A. Well, it would tend to throw more butter back on the market, which would tend to lower the butter market, which is the basis for all prices in the dairy business, and it would probably get over into the ice cream business and it could get around several ways there, mixed up with different dairy products. I can see where it would be very detrimental to the dairy business.

"Q. Are you familiar with the filled milk business that grew up in this country prior to 1923? A. Well, only at long range. I knew about it at that time; but I haven't followed the details on it.

"Q. At that time was there anything besides filled milk produced? A. Well, they used that product in cheese, I think, at one time, and, yes, it was used in other products, the vegetable oils were, filled cheese.

"Q. Ice cream? A. I am not positive about ice cream but I suspect it was.

"Q. In your opinion, is it advisable or necessary in order to maintain a better sanitary and better quality milk to prevent the sale of filled milk? A. Yes, I think it is.

"Q. Mr. Dodge, what is the Babcock test? A. Well, that is a test for arriving at the percent of butterfat in milk and cream, invented by Professor Babcock of Wisconsin back in the early nineties. Centrifugal force is used along with sulphuric acid to bring the fat out of the milk and bring it to the top.

"Q. Is that a standard test in Kansas? A. Yes.

"Q. Could you or your deputies determine by the Babcock test whether the fat in a product such as Milnot was butterfat or some vegetable oil? A. No, we could not.

"Q. In your opinion, could the sale of this product or a product such as Milnot be effectually regulated if not prohibited? A. No, I don't think it could.

"Q. And why do you say that? A. Well, you can take cream, for instance, and dilute it with a certain percent of vegetable oil; like cottonseed oil, and even the chemists, say, 10%, even the chemists can't distinguish that dilution, that adulteration. they can't catch it because you take butterfat is made up of fatty acids, about 22 or 24 of them, and your vegetable oils are made up of about six. Well, those six are similar to some of these 24 over here, and until you get enough difference, say, if you had a fifty-fifty mixture, they might tell it because the percentages would change, but on a 90 percent and 10 percent mixture, they can't distinguish. I have had that proposition up both at the State College and with the Federal laboratory, and that is the information that I received there."

"Q. Would you be in a position to check all the stores in the state as to whether this product was being misrepresented? A. No.

"Q. Or whether consumers were purchasing it knowing what they were getting or knowing what they were not getting? A. No, we wouldn't, not at all.

"Q. In other words, so far as any confusion in the sale or purchase of this product, it would be a difficult problem for you to handle so far as regulation? A. That is right." (Tr. 1551, 1552, 1553, 1554.)

The witness, on cross examination, testified:

"Q. I will get back to my original question. I want to ask you how you distinguish, if you do distinguish, between the sale of dried skimmed milk and this product as affecting the butter market.

"MR. MORRIS: I object to the question as repetition. He has answered the question.

"THE COMMISSIONER: Overruled.

"A. Well, your dried skimmed milk is a dairy product and it is divided into fat and dried milk and each goes its respective way. They are displacing nothing. In your Milnot, you are taking the fat that normally would be sold as evaporated milk and displacing evaporated milk sales and using a vegetable oil to do it with, and this fat that goes back onto the market naturally has a tendency to depress the market, and if this thing was legal, of course, the amount that is made now doesn't amount to much, but if this was legal and all the evaporators went to doing that, which they say they might do, it would be a very real factor in depressing the butter market. (Tr. 1559.)"

"Q. Then as I understand you, you object to the taking of skimmed milk and processing it so as to make it more palatable and more useful and

putting it on the market, you object to that, while you do not object to the putting of skimmed milk on the market? A. The thing I object to is replacing butterfat with a cheap oil.

"Q. And you do that simply because of its resulting in a product that you feel would be in competition with evaporated milk? A. I think it is resulting in a product that is detrimental to consumers and it is also very injurious to our dairy industry, which is the largest industry in the country." (Tr: 1560.)

"Q. As a matter of fact, you don't believe it is right to require useful food products, even though they may not be considered as high a class as some other portion of the animal or some other portion of the product, to be thrown away or diverted to other uses than food? A. *I think that the food business has to be regulated. We have to look at the whole picture. I think we have to look at the health angle and I think we have to look at the economic angle as it bears on health, and I think there are lots of angles to consider in a thing of that kind. I don't think you can just stand up here and say, 'I will do it this way or do it that way.' Those things have to be studied out.*

"Q. Now, you talk about the economic angle as it bears on health. Just what do you mean by that? A. Well, if you can look at it this way: if you would go in and wreck the dairy industry or for any reason prices would become so low that, we will say, here in Kansas 130,000 farmers were deprived of that particular income, why, it would

have considerable effect on them, their health, the way they raised their families, and everything that had to do with them. Then again you can take the angle that a producer wouldn't produce as good a quality and it would reflect back on all of the consumers.

"Q. When you make that statement, do you take into consideration the economic welfare and the health of the consuming public. A. Yes.

"Q. Do you believe that in order to preserve some business interest producing foods, that competition with those foods should be prohibited to preserve the status of that institution or that class of producers as against the general public? A. No, I don't believe in that. (Tr. 1574, 1575.)

Law Enforcement

HARRY DODGE

"Q. (By Mr. Clark): I just want to ask one question. Mr. Dodge, are you acquainted with S.M.A. and Similac, Olac, and products of that sort?

A. I have heard of them. I know very little about them.

"Q. They have been sold for some 20 years, some of them, in the State of Kansas, have they not?

A. *I really don't know much about them. They have never been called to our attention in a public way.*

"Q. Well, you know that they have been sold and your investigation of this subject from a health point of view has included an investigation of those

products, has it? A. I don't think I have ever seen a can of any one of them. I have never had a complaint on them.

"Q. Never had a complaint on them? A. Never had a complaint on them.

"Q. Any communication from the State Board of Health to you with reference to those products? A. I don't remember of having anything from them at all.

"MR. MORRIS: Are you contending they are a violation of this statute?

"MR. CLARK: That is my question. (Tr. 1580.)

"REDIRECT EXAMINATION:

"Q. Do you know whether they are a liquid or a solid? A. *I really don't know a thing about them. We never had any complaint or never had them brought before our office in any way.*" (Tr. 1581.)

"Q. *Have you ever had any complaint against this product Milnot?* A. *Plenty of them.*

"Q. Well, from anybody except the canned milk people? A. Yes, I have had lots of complaints on the sale of this.

"Q. From what source, the consumer, from any consumer that ever tried it? A. Well, we have had letters in from over the state. I don't know what all those people are doing that have written in at different times. Possibly they are in the dairy business, some of them.

"Q. Did you ever have any complaint from anybody that is not connected with the milk people, canned milk people? A. Yes, not connected with the canned milk people. I can't say offhand—I have had so many letters about that that I couldn't say offhand where they all did come from.

"Q. What was the nature of their complaint? A. It was illegal to sell it. They knew it was illegal to sell a product of that kind.

"Q. Did they ever complain about the wholesomeness of it or anything of that character? A. I think most of the complaints were based on the fact that it was a violation of the law and that this company was going ahead and deliberately violating the law and they rather resented that fact.

"Q. That came, you say, largely from the dairy interests? A. I don't know as it did. It came from lots of merchants. This merchant over here was abiding by the law and this man over here was selling it in violation of the law, and lots of it came through the retailers themselves.

"Q. But you never at any time have had any complaint from any consumer or any doctor or any pediatrician? A. That is covering a lot of territory.

"Q. I want to cover a lot of territory so as to give you every opportunity, Mr. Dodge. A. I just couldn't answer that definitely because I would have to go back over my letters and look them up. I couldn't say yes or no to that.

"Q. But now you don't recall of any? A. I don't recall of any; that is right." (Tr. 1582, 1583.)

"Q. Have you ever made any investigation to determine what economic effect it has on the State of Illinois, the fact that this new market is being made for skimmed milk down there? A. No, but I have some information as to what happens where the product is sold unrestrictedly. I had people who are selling evaporated milk in a state like Missouri tell me, where it is unrestricted, that it is very damaging to the sale of evaporated milk over the state and people buy this vegetable oil product and there is not as much evaporated milk sold, and therefore it reflects back to the producer where that product is made.

"Q. Have you ever made any personal investigation to determine whether that is a fact or not or is that just hearsay with you? A. I haven't made any survey on the matter, no." (Tr. 1584.)

Ownership of Patent

With reference to the question of the patent covering the processing of Defendant's product, the following testimony should be included:

CHARLES HAUSER, witness for the Defendant, testified as follows on this point:

"Q. (By Mr. Morris): You say the Carolene Products Company owns the patent on this product?

A. They did own a patent, yes.

"Q. Who owns it now? A. It has expired." (Tr. 75.)

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PLAINTIFF'S EXHIBIT A

CHARLES HAUSER, on cross-examination, testified that Plaintiff's "Exhibit A" was the label used by Carolene Products Company on its product involved in the case of *Carolene Products Company v. Mohler*, et al., 152 Kan. 2. Said exhibit is as follows:



HARRY W. JOHNSON, a witness for Defendants, testified on cross-examination at Topeka, February 19, 1942, that any arrangements made with retailers comes through the Carolene Products Company (Tr. 623).

"Q. Have you seen any of those letters? A. Yes.

"Q. Do you have any with you? A. No.

"Q. Where did you see the letter? A. I got copies of all correspondence in my territory.

"Q. What was the nature of those letters? A. I can't repeat that word for word.

"Q. They related to the defense of these retailers in case they were arrested or something? A. I believe so." (Tr. 623, 624.)

PLAINTIFF'S EXHIBIT G

Plaintiff's "Exhibit G" was identified and admitted
in evidence (Tr. 624):

**"PLAINTIFF'S EXHIBIT G, EFM
'SO RICH IT WHIPS'**

CAROLENE PRODUCTS COMPANY

Phones 201 and 204

Carolene

Litchfield
Illinois

Milnut

September 3, 1941.

Drive-in-Market
Halstead, Kansas:

GENTLEMEN:

With reference to the legal situation on MILNOT in the state of Kansas, your state has a law passed at the instigation of our competitors, the manufacturers of canned milk, which prohibits the sale of filled milk. However, it is our contention that this old law does not cover our present product made with the cottonseed oil and reinforced with vitamins A and D. In other states we have been successful in having similar laws declared unconstitutional and we are confident that we will be able to accomplish the same thing in Kansas.

However, should the state finally decide against us and force us to discontinue the sale of MILNOT in Kansas—and we have every reason to believe that this will not happen—we will take every case of MILNOT off your hands and fully reimburse you so that you do not

stand a chance of being out one cent because of your having sold and carried MILNOT in stock.

You also have our guarantee that we will fully protect you in case any legal action should be brought against you by some state official.

We want you to know that we greatly appreciate your patronage.

Yours very truly,

CAROLINE PRODUCTS CO.

H. J. Miller/hw

(Signed) H. J. Miller"

(Tr. 625, 625a.)

PLAINTIFF'S EXHIBIT EE

The witness testified that he could produce the copies of letters which he had. Counsel for Defendants later produced copies of all such correspondence by the Company to retailers, which copies of letters were introduced as "Plaintiff's Exhibit EE". Said exhibits consisted of copies of sixteen letters with regard to the method and manner of marketing this product in Kansas. These letters started in July, 1941 and ran through the fall of 1941 (Tr. 1352).

Typical of such letters was that dated October 15, 1941, to the Reeble Food Market, Emporia, Kansas, which is as follows:

"October 15, 1941.

Reeble Food Market,
1005 Commercial Street,
Emporia, Kansas.

GENTLEMEN:

We have your letter of October 13th in regard to the legality of the sale of our products CAROLENE and MILNOT in Kansas. At the present time, we have litigation in progress in Kansas which is designed to test the constitutionality of the Kansas law as applied to our products CAROLENE and MILNOT. We are continuing the sale of our products in Kansas during this litigation and we do not feel that there will be any further prosecution of Kansas retailers. However, if the State Dept. should prosecute a retailer we will defend the retailer and pay all costs of such litigation, providing he will plead not guilty and that he gives us an opportunity to defend him.

If you should have any further question in regard to this matter, please do not hesitate to write us.

Very truly yours,

CAROLENE PRODUCTS COMPANY.

M. H. Hauser:MB" (Tr. 1357).

Defendant's counsel admitted that it appeared in the defense of retailers being prosecuted by the State for the sale of said product, at retail, and also agreed to pay the expense of local counsel. Said admissions were as follows:

Plaintiff's Surrebuttal Testimony

"Whereupon, the Plaintiff, to surrebut the testimony offered on the part of the defendants, offered testimony, oral and documentary, and made admissions as follows, to-wit:

"MR. MORRIS: Mr. Clark, I think we will probably agree to some facts I would like to ask you about. I think the State Board of Agriculture has caused twelve arrests on retailers who sold the Carolene Company product in Kansas and that you appeared as counsel in defense of five of those that were filed in Wichita. Do you agree to that, Mr. Clark?

"MR. CLARK: I prepared the pleadings in those and if you say my name is signed to it, I will say that I appeared. It was my intention to appear, if I didn't appear, representing the interest of this product that is being sold down there and in defense of the product. I worked in collaboration with other attorneys.

"MR. MORRIS: You represent the company generally in Kansas in taking care of this type of litigation?

"MR. CLARK: I have. I have advised with lawyers who have represented defendants who have been arrested in these cases not only at Wichita but, as I recall, in Abilene also.

"MR. MORRIS: And did the particular individual who was arrested choose his own counsel? (Tr. 1843.)

"MR. CLARK: He chose his own counsel and I collaborated with that counsel.

"MR. MORRIS: And the company was to take care of the expense of those counsel:

"MR. CLARK: There was that agreement in one case but not at Wichita, as I recall. Now, I may be wrong. I guess I am wrong about that. We take care of the expenses of the counsel that they choose, yes.

"THE COMMISSIONER: I didn't hear your last statement, Mr. Clark."

"MR. CLARK: Yes, I say we were to take care of the expense of counsel." (Tr. 1844.)

Offer of Proceedings in Former Trial

Plaintiff offered in evidence copy of the transcript, all abstracts and briefs filed in the Supreme Court in the case of *The Carolene Products Company v. J. C. Mohler*, No. 55535, District Court, Shawnee County, Kansas, reported in 152 Kan. 2, to show the product in the former suit, how the product was sold and the findings of the court in that case, for the purpose of comparison with the product there in question and the product now in consideration, as to whether or not there is any substantial difference in the two products that would justify any court in finding that the statute was constitutional as to that product, but not as to the product before the court, said records being offered, not to prove any issues now before the Court, but for the purpose of comparing the two products as to whether there was any justification for re-litigation of the case. Such pro-

ceedings records were received, subject to the objection of the defendants that it was incompetent, irrelevant and immaterial. (Tr. 1561,1566, inc.)

The above and foregoing is a true and correct counter-abstract of the testimony.

A. B. MITCHELL, Attorney General,
C. GLENN MORRIS,
Special Assistant Attorney General,
WARDEN L. NOE,
Special Assistant Attorney General,
Topeka, Kansas.

Attorneys for Plaintiff.

The cost of printing this counter abstract is \$140⁰⁰.



19-7444

[fol. 3] Be It Further Remembered, that on the 10th day of June, 1943, the same being one of the regular judicial days of the January, 1943, term of the Supreme Court of the State of Kansas, said court being in session in its courtroom in the city of Topeka, the following proceeding among others was had and remains of record in the words and figures as follows, to-wit:

[fol. 4] IN THE SUPREME COURT OF THE STATE OF KANSAS

Topeka, Thursday, June 10, 1943,

No. 35,143

THE STATE OF KANSAS ex rel., Jay S. Parker, as Attorney General (A. B. Mitchell, substituted), Plaintiff,

vs.

THE SAGE STORES COMPANY, a corp., and CAROLINE PRODUCTS COMPANY, a Corp., Defendants

This cause comes on for hearing upon the pleadings filed herein and thereupon, after oral argument by T. M. Lillard, Boyle G. Clark and Tinkham Veale for the defendants and C. Glenn Morris for the plaintiff, said cause is submitted upon briefs of both parties and taken under advisement by the court.

It is further ordered that the defendants be permitted to file a reply brief herein.

[fol. 5] IN THE SUPREME COURT OF THE STATE OF KANSAS

Topeka, Saturday, October 2, 1943.

No. 35,143

STATE OF KANSAS ex rel., A. B. Mitchell (substituted), as Attorney General, Plaintiff,

vs.

THE SAGE STORES COMPANY, a Corporation, and CAROLINE PRODUCTS COMPANY, a Corporation, Defendants

This cause comes on for decision and thereupon, after the consideration by the court, it is ordered and adjudged

that the writ is allowed, but in conformity with finding 56, ouster of the defendant, The Sage Stores Company, is hereby limited and restricted to the extent of enjoining it from selling or keeping for sale the product of the defendant, Carolene Products Company, whether sold or kept for sale under the trade name of Carolene and Milnor or under any other fictitious or trade name.

It is further ordered that judgment be rendered against both defendants for the costs of this action.

[fol. 6] WEDELL, J. delivered the opinion of the court, DAWSON, C. J.; HARVEY, J.; THIELE, J. and PARKER, J. concurring; WEDELL, J. dissenting; SMITH and HOCH, J. J. join in the dissenting opinion.

[fol. 7] Be It Further Remembered, that on the 2nd day of October, 1943, there was filed in the office of the Clerk of the Supreme Court of the State of Kansas the Syllabus and Opinion of the court, a copy of which Syllabus and Opinion is in the words and figures as follows, to-wit:

[fol. 8] No. 35,143

THE STATE OF KANSAS, ex rel. A. B. MITCHELL (substituted),
as Attorney General, *Plaintiff*, v. THE SAGE STORES COM-
PANY, and CAROLENE PRODUCTS COMPANY, *Defendants*

Syllabus by the Court

CONSTITUTIONAL LAW—*Police Power—Validity of Filled-milk Statute.* The Kansas filled-milk statute, being paragraph 2, Subdivision F of G. S. 1935, 65-707, provides: "It shall be unlawful to manufacture, sell, keep for sale, or have in possession with intent to sell or exchange, any milk, cream, skim milk, buttermilk, condensed or evaporated milk, powdered milk, condensed skim milk, or any of the fluid derivatives of any of them to which has been added any fat or oil other than milk fat, either under the name of said products, or articles or the derivatives thereof, or under any fictitious or trade name whatsoever." The record in an original action in quo warranto examined, and *held*: (1) the statute does not violate section 1 of the bill of rights, or section 17, article 2, of the constitution of the state of Kansas or the fourteenth amendment to the constitution of the United States; (2) the writ is allowed, but ouster of the defendant, The Sage

Stores Company, to transact business under its charter is limited and restricted as provided in the opinion; (c) judgment is rendered against both defendants, The Sage Stores Company and Carolene Products Company, for the costs of the action.

Original proceeding in quo warranto. Opinion filed October 2, 1943. Limited writ allowed.

C. Glenn Morris and *Warden L. Noc*, both of Topeka, argued the cause, and *A. B. Mitchell*, attorney general, was on the briefs for the plaintiff.

Tinkham Veale, of Topeka, argued the cause for defendant The Sage Stores Company; *Boyle G. Clark*, of Columbia, Mo., and *T. M. Lillard*, of Topeka, argued the cause, and *Paul M. Peterson* and *W. L. Nelson, Jr.*, both of Columbia, Mo., were on the briefs for defendant Carolene Products Company; *Clark, Boggs, Peterson & Becker*, of Columbia, Mo., of counsel.

[fol. 9] The opinion of the court was delivered by

WEDELL, J.:

This is an original action in quo warranto, instituted by the state on the relation of the attorney general, to oust the defendant, The Sage Stores Company, a Kansas corporation, chartered to transact a general mercantile business, from doing business in this state on the ground it is unlawfully keeping for sale and selling a "filled-milk" product under the trade names of Milnot and Carolene. The product is manufactured and distributed by defendant Carolene Products Company, a Michigan corporation.

Plaintiff's amended petition alleged the latter corporation, although not authorized to do or doing business in Kansas, had an interest in the product, that an actual controversy had arisen concerning the lawful sale of its product and that it should be made a party defendant in the litigation. The defendants filed separate answers.

The statute involved is G. S. 1935, 65-707, and is commonly known as the "filled-milk" statute. The particular portion thereof alleged to have been violated is subdivision (F) (2), which reads:

"It shall be unlawful to manufacture, sell, keep for sale, or have in possession with intent to sell or exchange, any

milk, cream, skim milk, buttermilk, condensed or evaporated milk, powdered milk, condensed skim milk, or any of the fluid derivatives of any of them to which has been added any fat or oil other than milk fat, either under the name of said products, or articles or the derivatives thereof, or under any fictitious or trade name whatsoever."

In addition to facts previously stated plaintiff's amended petition, insofar as material, in substance, alleged:

The defendant, Carolene Products Company, was organized for the purpose of engaging in the distribution of milk products and derivatives thereof (the petition named the milk products enumerated in the statute) and defendant, The Sage Stores Company, unlawfully has in its possession and is unlawfully selling in this state such milk products to which have been added various fats and oils *other than milk fat* under the fictitious trade name of Carolene and Milmut; such acts are in violation of the milk, cream and dairy public health laws of this state, Article 7, Chapter 65, General Statutes of Kansas, and particularly G. S. 1935, 65-707 (F) (2); The Sage Stores Company, according to its annual statement filed with the secretary of State for the year 1940, described its business to be "retail groceries and meats"; the state of Kansas is a market for the [fol. 10] product of the Carolene Products Company and The Sage Stores Company and other retailers are market outlets for such products if they can be sold lawfully in Kansas; by reason of the described unlawful acts of The Sage Stores Company it has misused and abused the franchises, privileges and authority conferred upon it; such unlawful acts have been of great harm and injury to the general public and the state.

Plaintiff prayed that The Sage Stores Company be ousted, restrained and enjoined from transacting any further business under its charter and that defendant, Carolene Products Company, be restrained and enjoined from distributing and selling its product in this state.

The pertinent portions of the separate answers filed by the defendants are identical or sufficiently similar to make it unnecessary to duplicate the averments thereof. This court appointed the Hon. J. B. McKay, of El Dorado, as its commissioner, directed him to take testimony and to make findings of fact and conclusions of law. His findings of fact are appended to this opinion and made a part

hereof. The commissioner has referred to the Carolene Products Company as the defendant. In order to avoid confusion we shall do likewise. In the hearing before the commissioner the parties stipulated concerning some facts alleged in defendant's answer which were denied in plaintiff's reply. The stipulated facts are embodied in the commissioner's findings of fact and constitute the first eleven paragraphs thereof. The answer of the defendant is quite voluminous. In setting forth such averments thereof as were in substance later admitted, we shall refer to such facts alleged in the answer by directing the reader to pertinent stipulated findings of fact.

The answer denied: That defendant at the institution of this suit, or at any time thereafter, had shipped into Kansas for sale or had sold any products containing *coconut oil* in violation of the previous decision of this court; that its present products, Carolene and Milnot, contained *coconut oil* and alleged that among other ingredients they contained *cottonseed oil*. (For admissions of averments in the answer pertaining to products defendants were selling or distributing at the time the stipulation was made, the ingredients thereof, the sanitary method of their manufacture and distribution and the labels used on the products, see findings 2 to 11, inclusive.)

From the above admissions it is clear the ingredients [fol. 11] of Carolene and Milnot are identical. We shall therefore hereafter refer to them as defendant's product instead of products.

Defendant's answer, in substance, further alleged: The natural ingredients of its product are each and all wholesome and none of them is damaged in the process of manufacturing the completed product; defendant's completed product is not deleterious or ~~un~~ unwholesome but on the contrary is wholesome and nutritious; vitamins A and B are fat-solubles; in vitamin A and B content defendant's product is superior for human need to whole milk and evaporated whole milk for the reason that such vitamin content fluctuates in whole milk or evaporated whole milk, depending upon the season, the feed of the cow, the breed of the cow and the condition of the cow; whereas the vitamin A and B content in defendant's product is superior in both quantity and uniformity; defendant's product with respect to the remaining vitamins in whole milk or evaporated whole milk, is demonstrably superior; at the time

the law in question was enacted defendant's product was unknown; defendant's fortified milk product has come to be regarded by biochemists, physicians, dietitians, and nutritionists as wholesome, healthful, growth-producing, nutritious and beneficial generally as a food in every respect; its product is unusually well fitted as an infant food and is used in many instances where whole milk or evaporated whole milk cannot be fed to infants; the product is not sold in imitation of milk but is properly and plainly labeled with a prominent warning that it is not evaporated milk or cream; defendant's product complies in all respects with the federal food and drug laws and with all Kansas laws relating to and prohibiting the adulteration and misbranding of food products; there is no foundation in fact for the presumption and charge that defendant's product is adulterated or that its sale is a fraud on the public; there is no difference of opinion concerning the wholesomeness and sufficiency of the product as a milk compound and the vitamin sufficiency thereof; there is no rational basis for prohibiting the manufacture, possession or sale of defendant's product.

The answer, in substance, further alleged: Much skimmed milk is now wasted, fed to animals, or discarded and the public is deprived of the benefits of the supply of this highly nutritive and essential food; the cost of evaporated milk and whole milk is so high as to make it prohibitive [Gl. 12] for general consumption; the manufacture of defendant's product not only permits utilization of the butterfat in the form of butter and cream, after separation, but preserves for the public use at low prices the skimmed milk which otherwise would be unavailable and the product is, therefore, a great benefit to the public rather than a detriment; by reason of the use defendant makes of skimmed milk the farmer and dairyman are paid a higher price for the surplus milk than they receive from the whole milk evaporator, the fluid milk distributor and pasteurizer, or from any other processor of milk products; while extending the benefits of milk consumption by producing a cheaper and superior product from the skimmed milk, the manufacturer of the product is at the same time able to increase the income of the farmer and dairyman engaged in the production of milk, with the result that a benefit rather than a detriment accrues to the public; the prohibition of the manufacture, sale or possession of defendant's product

and criminal punishment therefor, notwithstanding the product is a wholesome nutritious food product rich in vitamins, is unconstitutional and void for the following reasons:

"(a) Such prohibition and punishment under any statute relating thereto and not embracing generally all food containing oil or fat, other than milk fat, or all foods in which milk and oil or fat, other than milk fat, are compounded is in violation of section 17 of article II of the constitution of Kansas, prohibiting the enactment of a special law where a general law can be made applicable.

"(b) Such prohibition and punishment violates section 1 of the bill of rights of the constitution of Kansas by denying to this defendant its natural and constitutional rights of life, liberty and the pursuit of happiness.

"(c) Such prohibition and punishment deprives this defendant of its liberty and property without due process of law in violation of the fourteenth amendment to the constitution of the United States, and deprives this defendant of the equal protection of the laws of the state of Kansas in violation of said constitutional provisions, and abridges the privileges and immunities of this defendant as a citizen of the United States in violation of said constitutional provisions.

"(d) The prohibition of the sale of a pure, wholesome, sanitary, nutritious, and unharshful food compound, and punishment therefor, is contrary to public policy, is an arbitrary and unreasonable interference with private persons, is wholly without the scope of the police power, is an unreasonable and unnecessary restriction upon trade, and is therefore unlawful, oppressive and unrelated to the health, welfare, safety or morals of the people of this state or any of them."

Defendant's answer also, in substance, alleged:

Various milk products (naming them) which are fortified (fol. 13) with fat or oil, other than milk fat, are being sold in the state without interference by state or county officials; if the sale of defendant's product is prohibited by the statute, such other products are likewise prohibited; action to prohibit only the sale of defendant's product consti-

tutes a denial to defendant of the equal protection of the laws of this state and constitutes enforcement of the laws in a manner that abridges the privileges and immunities of defendant as a citizen of the United States, all in violation of the first section of the fourteenth amendment to the constitution of the United States.

Plaintiff filed a separate reply to the separate answers of the defendants. The replies are identical or sufficiently similar, with respect to essential matters, to make it unnecessary to duplicate the contents thereof. We shall summarize the material averments of the reply to the answer of the defendant Carolene Products Company. The reply denied that failure to bring actions to prohibit the sale of other milk products to which fat, other than milk fat, had been added constituted a defense to the present action and alleged such averments should be stricken from the answer. Plaintiff's reply contained the same denial and made the same request with respect to defendant's answer which raised economic issues and which pertained to the effect of the manufacture and sale of defendant's product upon the dairy industry.

The court, after the completion of the pleadings and prior to the hearing before the commissioner, sustained plaintiff's motion relative to averments in the answer which charged discriminatory enforcement of the law (see finding 54) and overruled plaintiff's motion touching the other defenses mentioned in the last preceding paragraph.

The reply admitted the averments of defendant's answer with respect to the contents, or ingredients, of defendant's product, the sources of its ingredients and the manner in which the product was manufactured. (See findings 6, 7, 8, 9 and 11.)

The reply, in addition to a general denial of all averments not admitted, in substance, further alleged:

Defendant's product is the identical product heretofore condemned by this court in the case of *Carolene Products Co. v. Mehler*, No. 34,307 (152 Kan. 2, 102 P. 2d 1044), with the exception that the defendant's present product, Carolene and Milnot, contains cottonseed oil where the former product, Carolene and Milnot, contained coconut oil; irrespective of the trade name, the product is not milk, is [fol. 14] inferior to the natural product, milk; the statute prohibits the addition of any fat or oil, other than milk fat, to milk in any of the forms or derivatives named in the

statute; the statute is designed to protect the public health, morals and welfare of the people and to prevent fraud and deception in the purchase and consumption of milk, cream and other dairy products and violates no provision of the state or federal constitution.

After the introduction of evidence before the commissioner was concluded defendants, with consent of the court, were permitted to file supplemental answers in which they, in substance, alleged:

The prohibition of the sale of its product, Milnot and Carolene (a liquid product), and the permission by the state to sell for infant and human consumption other combinations of dried milk, skimmed milk and milk derivatives and vegetable oils constitute arbitrary and unreasonable discrimination against the defendant and denies to it the equal protection of the law; the statute constitutes the enactment of a special law where a general law can be made applicable; the statute violates state and federal constitutional provisions (previously designated in its answers); it appears from the statute itself that it is not a health measure.

Touching the subjects of the commissioner's permission to introduce additional testimony after the filing of the supplemental answer, the rejection of the offer by the parties and the question of the validity of the statute itself, see finding 55.

The foregoing summary of the pleadings, considered in connection with the facts agreed upon by the parties, quite clearly discloses the remaining questions of fact upon which issues were joined. This summary also discloses the general legal contentions of the parties which it is unnecessary to repeat.

The report of the commissioner discloses the extensive scope and character of the evidence introduced and the eminence of the expert witnesses in their respective fields. Those subjects require no further comment. Requests for findings of fact and conclusions of law were submitted to the commissioner by both parties. Defendants have excepted to the failure of the commissioner to make certain findings of fact and conclusions of law requested by them. Defendants have also excepted to certain findings of fact and to the conclusions of law made by the commissioner. We have considered the grounds of the various exceptions. Plaintiff asks for judgment on the commissioner's findings of fact and conclusions of law.



[fol. 15] This is an original action in this court. Findings of fact made by the commissioner are advisory only and do not have the effect of finality accorded to findings of fact made by a trial court. In the latter type of case we examine the record only sufficiently to determine whether there is substantial testimony to support the findings made and not whether there is evidence which would support, or would tend to support, contrary findings, if made. In an original action, such as the instant one, the findings of the commissioner being challenged are not conclusive but are advisory only. Under such circumstances it is the duty of this court to examine the entire record for the purpose of reaching its own independent conclusions. (*State, ex rel. v. McKnaught*, 152 Kan. 689, 690, 107 P. 2d 693, and cases therein cited.)

The fact that ultimate responsibility to determine the facts and to reach a conclusion remains with the court does not mean, however, that the findings of the commissioner are not helpful. In *Hunt v. Gibson*, 99 Kan. 373, 161 Pac. 666, it was said: *B*

“Being challenged, the commissioner’s findings are advisory only. In the solution of doubtful questions of fact, some weight may be given them because the commissioner had the advantage of personal observation of the witnesses while they were undergoing examination. With this exception the court considers the evidence as though it had been taken by deposition.” (p. 375.)

In keeping with the court’s responsibility it has examined the record and after careful consideration thereof has concluded that while some exceptions have some merit, the findings on material matters are substantially correct. We have concluded that if certain additional requested findings, which have evidentiary support and which defendants contend are necessary to a proper determination of this case, had been included in the findings made, such fact would not require conclusions of law contrary to those made by the commissioner. For example, defendants take exception, on various grounds, to finding 53. The exceptions go primarily to the affirmative finding with respect to the inferiority of defendant’s product as to certain nutritive ingredients as compared with the nutritive value of whole milk or evaporated whole milk. There is competent evidence to support that finding. There is also competent testimony of experts that as to certain vitamins, particularly A and D.

defendant's product is superior to evaporated whole milk and that it is preferred by them to evaporated whole milk or the special purpose infant foods in the diet of infants under their care. (Finding⁵².)

[fol. 16] For the purpose of determining the constitutionality of the law in question it is immaterial whether we believe defendant's product when considered as a whole is inferior, equal or superior to whole milk or evaporated whole milk if substantial disagreement in fact exists with respect to the inferiority of the product as compared with whole milk or evaporated whole milk, and the legislature has some basis for believing a filled-milk product is likely to be sold or is susceptible of being sold as and for whole milk or evaporated whole milk with the result that the public may be deceived thereby. In other words, in the view we take of the law governing this case the sale of a filled-milk product, although wholesome and nutritious, may be constitutionally prohibited as well as merely regulated if the legislature has some basis for believing the product is inferior to whole milk or evaporated whole milk and that the sale of the product offers an opportunity for fraud and deception and that prohibition rather than mere regulation of its sale is necessary for the adequate protection of the public health or general welfare. We think there was a sufficient basis for the exercise of legislative judgment as to a filled-milk product and the remedy adopted to effect the legislative purpose.

Our independent examination of the record leads us to believe that notwithstanding the label correctly describes the contents of the product and conforms to the regulations and requirements of the federal food and drug administration and notwithstanding the fact the defendant Carolene Products Company puts into the cases of its product a "Notice" stating, among other things, "It is improper to advertise, represent, display or sell either of these products as milk, or evaporated milk or cream," the product nevertheless in numerous instances is sold as canned milk by dealers, accepted as such by some customers, and is used as advertised by the defendant Carolene Products Company to wit:—"Milk can be used for all culinary purposes wherever you now use whole milk, cream, whipping cream, or a canned milk."

As a result of our study of the record and in view of what already has been said, we have concluded the material find-

ings of the commissioner are substantially accurate and sufficiently extensive to form a proper basis for the formulation of conclusions of law. The following conclusions of law made by the commissioner are supported by authorities indicated thereunder by the court:

"1. The statute in question (G. S. 1941 Supp. 65-707 (F) § 17] (2) has a two-fold purpose: (1) Preservation of the public health, and (2) prevention of fraud and deception on the consumers of the state." (*Caroline Products Co. v. Mohler*, 152 Kan. 2, 8, 102 P. 2d 1044 [1940]; *Hebe Co. v. Shaw*, 248 U. S. 297, 63 L. Ed. 255, 258 [1919]; *U. S. v. Caroline Products Co.*, 304 U. S. 144, 149, 82 L. Ed. 1234 [1938]; *Caroline Products Co. v. Wallace*, 27 F. Supp. 110, 112 [1939]; *Caroline Products Co. v. Harter*, 329 Pa. 49, 197 Atl. 627, 119 A. L. R. 235 [1938].)

"2. Every presumption must be indulged in favor of the validity of legislative acts. Before a statute enacted in the exercise of the police power can be held unconstitutional, it must be shown that there was no conceivable reason for the legislative act." (*Caroline Products Co. v. Mohler*, 152 Kan. 2, 8, 10, 102 P. 2d 1044, [1940]; *O'Gorman & Young v. Hartford F. Ins. Co.*, 282 U. S. 251, 75 L. Ed. 324 [1931]; *Hebe Co. v. Calvert*, 246 Fed. 711, 717 [1917]; *Sitzer v. Mayo*, 150 Fla. 734, 9 So. 2d 280, 281 [1942].)

"3. If the character or effect of an article, as intended to be used, be debatable, the legislature is entitled to its own judgment, and its judgment cannot be superseded by the views of the court." (*Caroline Products Co. v. Mohler*, 152 Kan. 2, 8, 102 P. 2d 1044 [1940]; *Powell v. Pennsylvania*, 127 U. S. 678, 685, 32 L. Ed. 253 [1888]; *Hebe Co. v. Shaw*, 248 U. S. 297, 303, 63 L. Ed. 255 [1919]; *U. S. v. Caroline Products Co.*, 304 U. S. 144, 154, 82 L. Ed. 1234 [1938]; *Hebe Co. v. Calvert*, 246 Fed. 711, 717 [1917]; *Caroline Products Co. v. Evaporated Milk Ass'n*, 93 F. 2d 202, [1937]; *Caroline Products Co. v. Wallace*, 27 F. Supp. 110 [1939]; *Sitzer v. Mayo*, 150 Fla. 734, 9 So. 2d 280 [1942].)

"4. The constitutionality of an act may be challenged on the ground that it has no rational basis, as applied to a particular article, or that the facts which existed when the statute was enacted have ceased to exist, but such inquiries, where the legislative judgment is drawn in question, must be restricted to the issue whether any state of facts, either

known or which could reasonably be assumed, affords support for the act." (*Weaver v. Palmer Bros. Co.*, 270 U. S. 402, 70 L. Ed. 654, [1926]; *U. S. v. Carolene Products Co.*, 304 U. S. 144, 154, 82 L. Ed. 1234 [1938]; *Carolene Products Co. v. Wallace*, 27 F. Supp. 110 [1939]; *Setzer v. Mayo*, 150 Fla. 734, 9 So. 2d 280, 282 [1942]; *Carolene Products Co. v. Hanrahan*, Com. App., 291 Ky. 417, 164 S. W. 2d 597 [1941].)

"5. The fact that a food product is wholesome does not [fol. 18] of itself make a prohibitory statute either inapplicable to the product or unconstitutional as applied to it." (*Carolene Products Co. v. Mohler*, 152 Kan. 2, 102 P. 2d 1044 [1940]; *Powell v. Pennsylvania*, 127 U. S. 678, 684, 32 L. Ed. 253 [1888]; *Hebe Co. v. Shaw*, 248 U. S. 297, 303, 63 L. Ed. 255 [1919]; *Carolene Products Co. v. Wallace*, 27 F. Supp. 110 [1939]; *Setzer v. Mayo*, 150 Fla. 734, 9 So. 2d 280 [1942]; *Carolene Products Co. v. Hanrahan*, Com. App., 291 Ky. 417, 421, 164 S. W. 2d 597 [1941]; *Carolene Products Co. v. Harter*, 329 Pa. 49, 197 Atl. 627, 119 A. L. R. 235 [1938].)

"6. Whether the purposes of the statute may be attained by regulation or whether absolute prohibition is necessary are questions for the legislature." (*Powell v. Pennsylvania*, 127 U. S. 678, 32 L. Ed. 253 [1888]; *U. S. v. Carolene Products Co.*, 304 U. S. 144, 154, 82 L. Ed. 1234 [1938]; *Carolene Products Co. v. Wallace*, 27 F. Supp. 110, 411 [1939]; *Setzer v. Mayo*, 150 Fla. 734, 9 So. 2d 280, 282 [1942]; *Carolene Products Co. v. Hanrahan*, Com. App., 291 Ky. 417, 425, 426, 164 S. W. 2d 597 [1941]; *Carolene Products Co. v. Harter*, 329 Pa. 49, 197 Atl. 627, 119 A. L. R. 235 [1938].)

"7. It is not material that defendant's product was unknown when the statute was enacted." (*Hebe Co. v. Calvert*, 246 Fed. 711, 717 [1917].)

"8. Defendant's product is within the purview of the statute." (*Hebe Co. v. Shaw*, 248 U. S. 297, 63 L. Ed. 255 [1919]; *Carolene Products Co. v. Hanrahan*, Com. App., 291 Ky. 417, 164 S. W. 2d 597 [1941].)

"9. The legislature is not required to cover all evils of a like character in a single act. It may proceed step by step." (*State v. Nossaman*, 107 Kan. 715, 193 Pac. 347, [1920].)

U. S. v. Carolene Products Co., 304 U. S. 144, 151, 82 L. Ed. 1234 [1938]; *Carolene Products Co. v. Harter*, 329 Pa. 49, 56, 197 Atl. 627, 119 A. L. R. 235, [1938].)

"10. Whether other products and compounds come within the statute is not an issue in this case.

"11. It is not material that defendant intends for its product to be sold for what it really is and without fraud or deception. Since the product is susceptible of being sold as and for evaporated milk, and is so sold, the legislature has the right in the exercise of the police power to prohibit its sale as an instrument of fraud." (*Carolene Products Co. v. Mohler*, 152 Kan. 2, 10, 102 P. 2d 1044 [1940]; *Hebe* [fol. 19] *Co. v. Culvert*, 246 Fed. 711, 717 [1917]; *Carolene Products Co. v. Evaporated Milk Ass'n*, 93 F. 2d 202 [1937].)

"12. Tested by the foregoing principles, the statute, as applied to defendant's product, is constitutional and valid.

"13. Defendant The Sage Stores Company should be ousted from abusing its corporate franchises and privileges by selling Milnot and Carolene in violation of the statute.

"14. Judgment should be rendered against both defendants for the costs of this action."

Conclusion of law 10 is correct. In our view of the matter the charge of discriminatory enforcement was properly stricken from the answer. Mere failure to bring actions against others selling a product which, on the face of the statute, was barred, is no defense to the instant action. (*State, ex rel., v. Wheat-Farming Co.*, 137 Kan. 697, 715, 22 P. 2d 1093, *Boynton v. Fox West Coast Theatres Corporation*, 60 F. 2d 851, 854, and see, also, *Burbom v. City of Riverside*, 29 F. Supp. 3, 8, which distinguishes the noted case of *Yick Wo v. Hopkins*, 118 U. S. 356, 6 S. Ct. 1064, 30 L. Ed. 220, and similar cases.)

Defendant's contention, the alleged discriminatory enforcement of the law denied to it the equal protection of the laws of this state and abridged the privileges and immunities of defendant as a citizen of the United States in violation of the first section of the fourteenth amendment to the federal constitution, is not good. A corporation does not possess the privileges and immunities of a citizen of the United States within the meaning of the federal constitu-

tion. (*Warehouse Co. v. Tobacco Growers*, 276 U. S. 71, 72 L. Ed. 473; *Blake v. McClung*, 172 U. S. 239, 43 L. Ed. 432; *Schlager, Bates & Co. v. Walsh*, 226 U. S. 142, 57 L. Ed. 146.)

In this connection we may state also that during oral argument before this court on the subject of alleged discriminatory enforcement, defendant's counsel was reminded by the court that this was an original action in this court and that we could yet permit evidence to be introduced upon the subject. Defendant's counsel was asked whether it desired to have such permission granted and the reply was that counsel was not insisting upon it.

In its supplemental answer defendant alleged the statute constituted the enactment of a special law where a general law could be made applicable and it, therefore, violated the state and federal constitutions. Under this contention defendant raises a question of statutory construction. It ar-[fol. 20]gues if the statute be construed to permit the sale of powdered, or dried, skimmed milk which is fortified with fat or oil other than milk fat and, if the statute prohibits the sale of powdered whole milk which is fortified with fat or oil other than milk fat, the statute is unreasonable and arbitrary and violates the state and federal constitutions. Defendant's product is not a powdered whole milk or a powdered skimmed milk product and the question it raises is not properly an issue in this case and need not be determined. In any event the statute does not constitute special legislation insofar as defendant's product is concerned. The law is general and uniform as to each of the respective classifications of milk, whether they be liquid or powdered. The classification of liquid and powdered products has a sound basis at least insofar as prevention of misrepresentation or fraud is concerned. The liquid product is made far more nearly in semblance, if not in imitation, of milk than the powdered product and thus lends itself more easily to being sold or purchased as milk. Touching a related discussion see *Caroline Products Co. v. Harter*, 329 Pa. 49, 56, 57, 197 Atl. 627.

Defendant raised the economic issue over plaintiff's objection. In its answer defendant alleged facts, which it claimed constituted the manufacture and sale of its product a benefit rather than a detriment to the public. Those allegations need not be repeated. This being an original action and the court desiring not to exclude any testimony which might become material, overruled plaintiff's motion

to strike allegations of the answer touching economic aspects of the case.

Defendant claims the evidence supports the averments contained in its answer and that the economic benefits resulting to the public from the sale of its product are particularly important in view of food shortages resulting from the war. Defendant contends the prohibition of its product cannot be sustained on economic grounds alone or as a trade barrier statute for the protection of the dairy industry, or any other trade group. We, however, do not understand that defendant contends the economic issue is controlling in the event the statute is held to be a valid health measure designed to protect the public against deception and fraud. We have held it to be such a measure in *Carolene Products Co. v. Molder*, supra, and we adhere to that view now. The legislature, in the enactment of the law, had the right to weigh every factor germane to the subject of the public [fol. 21] health, including economic considerations, and we cannot assume it did not do so.

Defendant earnestly argues its product was not known when the statute was enacted in 1923 and it could not have been the intention of the lawmakers to prohibit the sale of its product which is equal or superior to whole milk. We need not repeat what previously has been said relative to the comparative nutritive value of defendant's product and whole milk. In support of its contention that an act will not be literally construed when it appears the lawmakers could not reasonably have intended to prohibit the particular thing in question, defendant cites the noted case of *Holy Trinity Church v. United States*, 143 U. S. 457, 12 S. Ct. 511, 36 L. Ed. 226; *United States v. Actna Explosives Co.*, 256 U. S. 402, 41 S. Ct. 513, 65 L. Ed. 1013; *Carolene Products Co. v. Mahoney*, 294 Fed. 902; and *In re Di Torio*, 8 F. 2d 279. In our opinion these cases are not controlling here. (See case cited under conclusion of law 7 and also *Carolene Products Co. v. Wallace*, 27 F. Supp. 110, 112, the subject of fortification of milk with new vitamins.)

While it probably is true the legislature, when it enacted the statute, did not have knowledge of defendant's particular product, it is also true the product is clearly within the prohibition of the statute and that the question of its inferiority as compared with products containing milk fat remains a debatable question among scientists today. Un-

der these circumstances we cannot say the product is not now within the terms of the statute.

In defendant's exhaustive brief are cited numerous cases which we do not deem it necessary to discuss separately. The important aspects of the case are treated in the authorities listed under the various conclusions of law previously stated. Defendant relies upon the following decisions involving wholesome and nutritious filled-milk products: *Carolene Products Co. v. Thomson*, 276 Mich. 172, 267 N. W. 608; *Carolene Products Co. v. Banning*, 131 Neb. 429, 268 N. W. 313; *John F. Jelke Co. v. Emery*, 193 Wis. 311, 214 N. W. 369, which in effect overruled *State, ex rel., Carnation M. P. Co., v. Emery*, 178 Wis. 147, 189 N. W. 564; *State, ex. inf. McKittrick, v. Carolene Products Co.*, 346 Mo. 1049, 144 S. W. 2d 153; *Carolene Products Co. v. Mahoney*, 294 Fed. 902, and affirmance of the last case in *Mahoney, et al., v. Carolene Products Co.*, 2 F. 2d 366.

Defendant relies also upon that portion of the majority opinion in *Setzer v. Mayo*, 150 Fla. 734, 9 S. 2d 280, 283, where it was said:

[fol. 22] "In fine, food values and the place of vitamins in the food is a subject that is still open for added knowledge. Well recognized food concepts of yesterday are being discarded because of scientific discovery. If therefore relators can show that notwithstanding their product is produced by substituting cotton seed oil or some other substitute for butter fat and vitamins it is wholesome and nutritious and that it is equal to or superior to whole milk as a food, the test prescribed in the last two cited cases is met and their product relieved from condemnation by the act." (p. 283.)

The last two cases referred to in the above quotation were *U. S. v. Carolene Products Co.*, 304 U. S. 144, 58 S. Ct. 778, 82 L. Ed. 1234, and *Carolene Products Co. v. Wallace*, 27 F. Supp. 110, affirmed without opinion in 308 U. S. 506, 60 S. Ct. 113, 84 L. Ed. 433.

The above quotation is not very helpful to defendant in the instant case for the reason that under the evidence in this case it remains a doubtful or debatable question whether defendant's product is equal or superior to whole milk.

Defendant also leans heavily upon the decision in *Wearer v. Palmer Bros. Co.*, 270 U. S. 402, 46 S. Ct. 320, 70 L. Ed. 654, as authority for the principle that an act which com-

pletely prohibits and suppresses the sale of an article which is not injurious is invalid under the equal protection clause of the federal constitution for the reason, that protection against possible deception in the sale of such an article or product may be accomplished by adequate regulation. In support of the same principle defendant relies upon the Michigan, Nebraska and the most recent Wisconsin case cited, all *supra* (filled-milk cases) and *People v. Weiner*, 271 Ill. 74, 78, 110 N. E. 870; *People v. Biessecker*, 169 N. Y. 53, 57-58, 61 N. E. 990; *The People v. Marr*, 99 N. Y. 377, 2 N. E. 29; *Meyer v. Nebraska*, 262 U. S. 390, 43 S. Ct. 625, 67 L. Ed. 1042, and *Schollenberger v. Pennsylvania*, 171 U. S. 1, 18 S. Ct. 757, 43 L. Ed. 49, the oleomargarine case.

In support of defendant's contention that it is not responsible for the false representations of retail advertisers when defendant has done its legal duty to properly distinguish its product from whole milk or evaporated whole milk it cites *Rathbone, Sard & Co. v. Champion Steel Range Co.*, 189 Fed. 26, 37 L. R. A., n.s., 258 and *Croline Products Co. v. Banning*, *supra*.

In support of defendant's contention that a statute valid when enacted may become invalid by reason of changed conditions it cites *Nashville, C. & St. L. Ry. Co. v. Walters*, 294 U. S. 405, 415, 55 S. Ct. 486, 488, 79 L. Ed. 949; *Abie State Bank v. Bryan*, 282 U. S. 765, 772, 51 S. Ct. 252, 75 L. Ed. 690; *Smith v. Illinois Bell Tel. Co.*, 282 U. S. 133, 162, [fol. 23] 51 S. Ct. 65, 75 L. Ed. 255; *Chastleton Corp. v. Sinclair*, 264 U. S. 543, 44 S. Ct. 405, 68 L. Ed. 841; *Shollenberger v. First State Bank*, 219 U. S. 114, 31 S. Ct. 189, 55 L. Ed. 117.

In our view of this case it will serve no useful purpose to extend this opinion by a discussion of the conflict, or apparent conflict, of authorities. We think the decision in this case is governed by the authorities cited in support of the conclusions of law previously stated. Those authorities, especially the later ones, treat the subject of conflict in the decisions. In quite a number of the cases the sharp conflict of authority is disclosed by dissenting opinions or by specially concurring opinions and what is there said need not be repeated here.

While in this opinion we have referred to defendants in the singular, the principles of law stated, of course, govern both defendants.

The writ is allowed, but in conformity with finding 56, onst^r of the defendant, The Sage Stores Company, is hereby limited and restricted to the extent of enjoining it from selling or keeping for sale the product of the defendant, Carolene Products Company, whether sold or kept for sale under the trade name of Carolene and Milnot or under any other fictitious or trade name.

Judgment is hereby rendered against both defendants for the costs of the action.

WEDELL, J. (dissenting):

The principal issues in this lawsuit are (1) the construction of the particular statute in question with a view of determining whether it constitutes a *reasonable* health measure, and (2) whether courts, for all practical purposes, are powerless to prevent the complete suppression of a legitimate business in an article of food which is not injurious and which, on the contrary, is not only wholesome but nutritious and which by reason of its low cost and superior preservative qualities is in great demand, especially by people in the lower income groups.

No progress can be made in answering these inquiries by dealing in generalities and platitudes relative to the subjects of "public health," "morals" or "general welfare." Manifestly, the first inquiry requires analysis of the sweeping terms and provisions of this particular statute. Its specific terms and provisions were not analyzed and construed by this court in *Carolene Products Co. v. Mohler*, 152 Kan. 2, 102 P. 2d 1044, with a view of determining whether it in fact constituted a *reasonable* health measure. [fol. 24] Without making such analysis, which we were then, as now, asked to make, we merely announced the conclusion that the purpose of the statute was to safeguard the public health and to prevent deception upon the citizen. In my opinion that was not a sound conclusion. On the contrary, I am convinced analysis of the statute clearly discloses it is a trade-barrier law and that it was designed primarily to advance the interests of the dairy industry.

If the statute was intended to be a health measure it must be a *reasonable* health measure. Does it constitute such a measure? I do not think so. I further believe courts have the ultimate responsibility and duty to determine whether an act constitutes such a measure or whether it is unreasonable, arbitrary and discriminatory.

In the first place this is not an adulteration act. The subject of adulteration of foods is covered by other statutes. The great variance in the nutritive character of milk is clearly established by the evidence in this case and is also a matter of common knowledge. Its nutritive value depends upon the cow itself, the food and care it receives, the season of the year and probably some other factors. This law fixes no standard of minimum nutritive value for whole milk. Milk which is permitted to be sold may be wholly inferior in nutritive value to the product the statute condemns. The law in no wise prohibits the subtraction of any of the nutritive ingredients from whole milk. It only prohibits the addition of something. The addition which it condemns is *any* fat or oil other than a fat or oil which belongs distinctly and solely to the dairy industry. Under the clear and unambiguous provisions of this law it is wholly immaterial whether any other fat or oil which might be added is equal or highly superior in nutritive value to milk fat. Irrespective of its value it is flatly condemned by legislative fiat.

In this record it is conceded that whole milk alone is not a perfect food. Yet under this law milk may not be improved and perfected as a food of universal consumption for the benefit of the public health by adding any fat or oil unless it be a fat belonging peculiarly and exclusively to the dairy industry. Under this law skimmed milk which has its milk fat removed nevertheless may be sold to the public with vitamins A and D absent therefrom, but if those fat solubles, vitamins A and D, are added to skimmed milk in even greater and more constant quantities than are contained in whole milk itself, as is done in the instant case, the [fol. 25] product is flatly condemned. I cannot bring myself to believe the primary purpose of such a law was the preservation of the public health. If, however, that was its purpose, the law clearly is not a reasonable health measure. It is unreasonable, arbitrary and discriminatory.

The supreme courts of Michigan, Nebraska and Missouri, which have construed identical and substantially identical statutes, have condemned them as constituting unreasonable health measures notwithstanding the prominence of the dairy industries in those states. (*Carolene Products Co. v. Thomson*, 276 Mich. 172, 267 N. W. 608; *Carolene Products Co. v. Banning*, 131 Neb. 429, 268 N. W. 313; *State*,

ex inf. McKittrick, v. Carolene Products Co., 346 Mo. 1049, 144 S. W. 2d 153.)

The Michigan and Nebraska courts have devoted particular attention to the construction of the statute. They concluded the statute was clearly unreasonable as a health measure and constituted a barrier to trade. The analysis of the statute made by each of those courts is clear and convincing. What is said there need not be repeated here. That analysis, in my opinion, is unimpeachable and stands unanswered by subsequent opinions of any court. Those decisions were not noticed in our former opinion in *Carolene Products Co. v. Mohler*, *supra*, and their clear logic has not been disturbed in any manner by the later opinions of such other courts as have cited them. It will be well to notice that they are cited in the specially concurring opinion of Mr. Justice Butler in *U. S. v. Carolene Products Co.*, 304 U. S. 144, 58 S. Ct. 778, 82 L. Ed. 1234, which opinion will be mentioned later.

Why should such a law which completely suppresses a legitimate business and which also deprives the public, especially the citizens in the lower income brackets, of the advantages of scientific discovery and research be upheld as a sound public-health measure? The answer certainly cannot be found in the character of the prohibited product. The principle that courts do not determine economic policies of legislation or its wisdom is elementary and requires no citation of authorities. Those are functions of the legislative branch of government with which courts cannot interfere. It is just as elementary, however, that in order for legislation such as this to be valid under the police power of the state, it cannot be arbitrary or discriminatory but must have a real and substantial relation to the objects sought to be attained. Courts are not powerless to determine the character of such legislation. The construction [fol. 26] of statutes and the determination of their reasonableness or unreasonableness is the ultimate province, responsibility and duty of courts and must be exercised by them if state and federal constitutional guaranties of liberty and property rights are not to be made completely subservient to legislative pressure groups which all too frequently secure the enactment of measures advantageous to a particular industry and detrimental to another. The preservation of constitutional guaranties against such in-

vasions and encroachments is one of the most sacred responsibilities courts are privileged to exercise.

Are the decisions of the supreme court of the United States contrary to what has been said herein on the subject of the construction of the Kansas law as constituting an unreasonable health measure? I do not think so. Nor do I so interpret the late Florida decision in the case of *Setzer v. Mayo*, 150 Fla. 734, 98 S. 2d 280, 282 (1942) leaned upon so heavily by the state. It was clearly recognized and stated in the Florida opinion that its statute contained definite exceptions not contained in the Kansas law and that the Florida law was not nearly as direct and comprehensive as the Kansas law. The question in the Florida case was whether the product fell within the exceptions of the Florida statute. The majority opinion in the Florida case, as expressly stated therein, was planted squarely on the doctrine laid down in *U. S. v. Carolene Products Co.*, 304 U. S. 144, 58 S. Ct. 778, 82 L. Ed. 1234, and *Carolene Products Co. v. Wallace*, 27 F. Supp. 110. The federal statute was involved in those cases and that statute expressly provides:

"Section 62. * * * It is hereby declared that filled milk, as herein defined, is an adulterated article of food, injurious to the public health, and its sale constitutes a fraud upon the public."

In the concurring opinion of Mr. Justice Butler in *U. S. v. Carolene Products Co.*, supra, the issue in the prosecution of the above statute was concisely stated as follows:

"I concur in the result. Prima facie the facts alleged in the indictment are sufficient to constitute a violation of the statute. But they are not sufficient conclusively to establish guilt of the accused. At the trial it may introduce evidence to show that the declaration of the act that the described product is injurious to public health and that the sale of it is a fraud upon the public are without any substantial foundation. *Mobile, J. & K. C. R. Co. v. Turnipseed*, 219 U. S. 45, 43, [55 L. Ed. 78, 80, 31 S. Ct. 136, 32 L. R. A., n. s., 226, Ann. Cas. 1912A, 463, 2 N. C. C. A. 243]; *Manton v. Georgia*, 279 U. S. 1, 6, [73 L. Ed. 575, 578, 49 S. Ct. 215]. * * * If construed to exclude from interstate commerce wholesome food products that demonstrably are neither injurious to [fol. 27] health nor calculated to deceive, they are repugnant to the Fifth Amendment. *Weaver v. Palmer Bros.*

Co., 270 U. S. 402, 412, 413, [70 L. Ed. 654, 657, 46 S. Ct. 320]. See *People v. Carolene Products Co.*, 345 Ill. 166, [177 N. E. 698]; *Carolene Products Co. v. McLaughlin*, 365 Ill. 62, 5 N. E. 2d 447; *Carolene Products Co. v. Thompson*, 276 Mich. 172, 267 N. W. 608; *Carolene Products Co. v. Banning*, 131 Neb. 429, 268 N. W. 313. The allegation of the indictment that Milburt 'is an adulterated article of food, injurious to the public health,' tenders an issue of fact to be determined upon evidence." (p. 155.)

The Florida court in interpreting that decision, and resting its own decision thereon, in substance said that if this product (the cottonseed oil product involved in the instant case) was *equal or superior* to whole milk in nutritive value, the product was not within the condemnation of the act. The Kansas statute, however, as previously shown, clearly is not open to such an interpretation. It arbitrarily suppresses, completely bans a legitimate business irrespective of the nutritive value of the product involved to which oil or fat, other than milk fat, has been added, and irrespective of whether it is honestly made, labeled and sold for exactly what it is. In other words, our statute completely bans the sale of any such product even though the public is not injured by its use and is in no way deceived by what it buys. The only possible remaining basis for the law is therefore the mere possibility that the sale of the product is susceptible to fraud. If the law was intended as a health measure it must be based upon the theory of such possibility of fraud. To meet that possibility the lawmakers chose to adopt the drastic remedy of prohibiting the sale of the product entirely. The same unreasonable prohibition was at one time applied to the sale of oleomargarine. (*Powell v. Pennsylvania*, 127 U. S. 678, 8 S. Ct. 1257, 32 L. Ed. 253, [1888].) But in 1898 the Supreme Court of the United States did not leave the final decision as to the reasonableness of such drastic legislation in the discretion of the law-making body. (*Schollenberger v. Pennsylvania*, 171 U. S. 1, 18 S. Ct. 757, 43 L. Ed. 49.) Every argument advanced by the state in the instant case was advanced by the state in the last cited oleomargarine case (see pages 7 and 8 of that opinion), but it was there determined:

"2. The fact that inspection or analysis of the article imported is somewhat difficult and burdensome will not

justify a state in totally excluding a pure and healthy food product.

"3. A state cannot absolutely prohibit the introduction within its borders of an article of commerce which is not adulterated, and which in its pure state is healthful, simply [fol. 28] because such article in the course of its manufacture may be adulterated by dishonest manufacturers, for the purpose of fraud or illegal gains." (43 L. Ed. headnotes 2, 3.)

In the course of the same opinion it was further pointedly stated: "The bad article may be prohibited, but not the pure and healthful one."

The drastic remedy of complete suppression of a healthful food product will receive further attention presently. What previously has been said relates primarily to the construction of the statute itself without regard to any particular product. For the purpose of dealing with the principle involved and its realistic implications it is wholly unnecessary to review in detail the voluminous record pertaining to the exact character of all the ingredients of the instant product. (See findings of commissioner 1 to 11, inclusive.) Observation of a few general facts will suffice. Every constituent element of the instant food compound is wholesome and nutritious in its natural state and that condition is in nowise altered in the process of manufacture or shipment in the original package. In some respects the product is clearly superior to whole milk or evaporated whole milk. Viewed in its entirety it is considered by numerous physicians, dietitians, pediatricians and nutritionists as superior to whole milk or evaporated whole milk and is also considered by them to be superior to the special baby food products as a diet for infants. It is actually preferred to whole milk by many housewives who know its character and contents. It has far greater resistance to rancidity than whole milk. It is well known that whole milk cannot long be stored. Milk is an excellent medium for growth of bacteria. The product in question is more practical and especially desired by the great mass of consumers in the lower income groups who are not blessed with modern refrigeration facilities. It is much cheaper than whole milk with the result that its nutritive value is available to people who are unable to buy and preserve the more expensive product, whole milk. It

frankly should be stated that there is some disagreement among the experts relative to its nutritive value as compared with whole milk. Some of them prefer whole milk. They believe that considered in its entirety whole milk contains greater nutritive value and growth promoting qualities than this product. But if there is any field of scientific research and discovery in which the experts agree as to every fact and detail, that field is foreign to the observation [fol. 29] and experience of most of us. In view of the entire record it is my opinion that it definitely may be stated this product is not injurious but on the contrary is wholesome and nutritious. The only difference of opinion pertains to the extent of its nutritive value as compared with whole milk. In other words, a question of comparative nutritive value is presented.

Shall this law be upheld upon the principle that the legislature has the power and authority to select for the individual citizen what food he shall eat and drink because in the judgment of that body, supported by some creditable testimony, one kind or brand of food or drink is slightly superior in some respects to another food or drink although the latter is admittedly superior in other respects? If the legislature possesses the power to determine that fact as to one food, it manifestly has the same power with respect to every food. Such power would enable the legislature to ban many common articles of commerce as, for example, syrup not all maple, shoes not all leather (*Carolene Products Co. v. Thomson*, supra), clothes or comfortables with shoddy in them (*Weaver v. Palmer Bros. Co.*, 270 U. S. 402, 46 S. Ct. 320, 70 L. Ed. 654) and the like.

It is indeed doubtful whether there is any brand of food concerning which there is no disagreement as to its nutritive value when compared with other similar foods. If the power of the legislature to prohibit the sale of a product may be based upon a difference of opinion as to the comparative nutritive value of various food products then the legislature has the power to impair as well as conserve the market for dairy products. (*Carolene Products Co. v. Thomson*, 276 Mich. 172, 183, 267 N. W. 608). If the legislative power rests upon such a basis then, under the evidence in the instant case, it undoubtedly has the power to completely suppress the dairy industry by prohibiting the sale of milk altogether as there is an abundance of evidence

in this record, which would support the judgment of any legislature, that the instant product is equal or superior to whole milk. (On the subject of such legislative power, see 35 Michigan Law Review, 982, 989.)

The instant record concedes that milk alone is deficient as a diet but certainly that fact should not justify the complete suppression of its sale. Certainly its sale is susceptible to deception. It is common knowledge that there is probably as much, if not more, deception in the sale of milk and cream by means of dilution than in the sale of any other single food product of universal consumption. The dairy industry, however, has not been suppressed. On the contrary, it often has been regulated in the minutest details and in most instances properly so. Owing to its important relation to the public welfare it has been regulated even to the extent of fixing the price of milk. (*Nebbia v. New York*, 291 U. S. 502, 54 S. Ct. 505, 78 L. Ed. 940.)

What reasonable basis is there for believing the public cannot be protected adequately by regulation of the sale of this product? The state, in substance, insists the legislature is the judge of the reasonableness of its own acts and that if there exists any basis for completely prohibiting the sale of a healthful product, which seems reasonable to that body, courts are powerless to interfere. If a mere difference of opinion as to the comparative nutritive value of foods constitutes a reasonable basis for permitting the sale of one food and prohibiting the sale of another, courts have little, if any, practical function left to perform in protecting the constitutional guaranty of a citizen's right to engage in a legitimate business. Among others, the state cites the case of *State, ex rel. Carnation M. P. Co., v. Emery*, 178 Wis. 147, 189 N. W. 564, in which the Wisconsin court, in holding a similar act constitutional, in part, said: "The court cannot try the legislature and reverse its decision as to the facts." (p. 160.)

Certainly courts do not try the good faith of the law-making body but they have a definite duty to review the record and to consider every pertinent factor known to them in determining whether legislation actually rests upon a reasonable basis. That is precisely what the Wisconsin court did, with a contrary result, in the later case of *John F. Pelke Co. v. Emery*, 193 Wis. 311, 214 N. W. 369, in which it clearly did not approve the effect of its earlier decision in

the first Emery case, *supra*. In the last decided case it clearly exercised its own constitutional authority and power to determine whether legislation which outlawed a wholesome, nutritious article of food actually rested upon a reasonable basis. In striking down the oleomargarine statute in the later case, it said:

"It prohibits the carrying on of a legitimate, profitable industry and the sale of a healthful, nutritious food. This prohibition can only be justified upon the ground that it is necessary in order to protect the public health, public morals, public safety, prevent fraud, or promote the public welfare. As already indicated, the public health is not endangered by the manufacture and sale of oleomargarine, and certainly no question of morals is involved. * * * Under the facts proven in this case, whatever the economics [fol. 31] of the situation may be, from the standpoint of constitutional right the legislature has no more power to prohibit the manufacture and sale of oleomargarine in aid of the dairy industry than it would have to prohibit the raising of sheep in aid of the beef-cattle industry, or to prohibit the manufacture and sale of cement for the benefit of the lumber industry. In some cases a proper exercise of the police power results in advantage to a particular class of citizens and to the disadvantage of others. When that is the principle purpose of the measure, courts will look behind even the declared intent of legislatures, and relieve citizens against oppressive acts where the primary purpose is not to the protection of the public health, safety, or morals. *Yick Wo v. Hopkins*, 118 U. S. 356, 6 Sup. Ct. 1064, 30 Lawy. Ed. 220, and cases cited in notes, p. 541. (pp. 318, 323.)

Of course, the legislature has the *primary* responsibility of determining the reasonableness of its acts. It, however, is not the sole and final judge of the reasonableness of its own acts. The *ultimate* power to determine whether legislation creates unreasonable, arbitrary and discriminatory classifications rests with the courts. (*Caroline Products Co. v. Thomson*, 276 Mich. 172, 267 N. W. 608; *Caroline Products Co. v. Banning*, 131 Neb. 29, 268 N. W. 312.) But whatever the rule may be in some states, in this state courts are now expressly charged with that responsibility and duty by constitutional mandate. (Art. 2, sec. 17.) This is not a

general law which, for the protection of the public, prescribes a minimum standard of nutritive value for milk and a substitute product. It creates a special classification of foods which is unreasonable, arbitrary and discriminatory. This court cannot evade its responsibility upon the mere theory there is some possibility for deception in the sale of a healthful food product. It must determine whether there exists a reasonable basis for making the classification and for adopting the drastic remedy of complete prohibition. In obedience to constitutional direction this court repeatedly has exercised its power and duty to strike down legislation covering various and sundry subjects *when in its opinion* the legislature did not have a reasonable basis for a classification it created. (*State, ex rel., v. Allen County Comm'rs*, 156 Kan. 248, 133 P. 2d 165, and cases cited therein.) These decisions constitute only a few of the numerous instances in which this court has exercised that function.

"The measure of police power must square with the measure of public necessity." (*Brooks v. United States*, 267 U. S. 432, 45 S. Ct. 345, 346, 69 L. Ed. 699, 37 A. L. R. 4407; *Caroline Products Co. v. Evaporated Milk Ass'n*, 93 F. 2d [fol. 32] 202, 204.) "Constitutional guaranties may not be made to yield to mere convenience." (*Schlesinger v. Wisconsin*, 270 U. S. 230, 46 S. Ct. 260, 43 A. L. R. 1224, 70 L. Ed. 557; *Caroline Products Co. v. Thomson*, *supra*.)

It may be simpler and more convenient to the state to arbitrarily stifle a legitimate business enterprise than to regulate it, but mere convenience to the state, as noted, is not the test. There is, in my opinion, no sound basis for the classification of foods made by our statute and there is no reasonable ground for the view that the public cannot be protected adequately by regulation of the sale of this healthful food product. Were the instant product injurious a far different question would be presented. Nothing has been added to give this product an artificial taste or color, or to give it a resemblance to any other food or food product. (Finding 33.) It is not advertised by its producer for any use to which it properly cannot be put. The only possible basis for the exercise of the police power here is that the public should be advised that the product is not whole milk. The only reason for so advising the public is not that the product is injurious, but because there is some dif-

ference of opinion relative to its nutritive value as compared with whole milk.

The labels employed by defendant since our previous decision have been submitted to and approved by the Federal Food and Drug Administration. The present label in clear and conspicuous fashion frankly states the product is—"Not evaporated milk or cream." The label accurately and truthfully discloses the exact constituents of the product. It is not claimed the product is adulterated or that defendant has violated any advertising or misbranding law of this state. If, however, the state is of the opinion larger and yet more conspicuous labels are necessary, it may require them. The state, of course, may, under its regulatory powers, prescribe any requirement for the protection of the public so long as it is reasonably designed to protect the public health and general welfare.

It is common knowledge that any food product or article of commerce is subject to misrepresentation. Manifestly, however, defendant should not be and is not made responsible for tricky or unfair advertisements by retailers. In *Carolene Products Co. v. Banning*, supra, it was aptly said:

"If retailers of a wholesome and nutritious food product practice deception in its sale, the remedy is by regulation and not by a destruction of the business." (p. 437.) (See, also, *Rathbone, Sard & Co. v. Champion Steel Range Co.*, [fol. 33] 189 Fed. 26, 37 L. R. A., n. s., 258, and Note 84 A. L. R. 488 b.)

It is conceded defendant encloses in the cases of its product a notice advising its dealers that—"It is improper to advertise, represent, display or sell either of these products as milk, evaporated milk or cream." If the state deems these precautionary measures insufficient, it may require retailers to place the product on separate shelves with conspicuous signs which read: "This is not milk." The state may make it a crime for retailers to sell the product without calling the contents of the label to the attention of the purchaser. Such, or other similar, requirements as may suggest themselves to the state are indeed simple in comparison with numerous other regulations and requirements made upon the citizen and businessman in these days under penalty of fine and imprisonment. Moreover, such regulations present minor problems of enforcement in comparison with the minute and detailed rules and requirements

now imposed upon various kinds of business and industry under numerous regulatory measures.

There is no similar food product on the market except the proprietary infant foods. The record discloses no administrative difficulty in ascertaining the contents of the product. The testimony discloses a competent food chemist can readily determine whether a fat in a product is butterfat or vegetable oil and whether a vegetable oil or fat is coconut oil or a hydrogenated oil of other sources. It is not difficult for a competent food chemist to analyze defendant's product and to determine whether its constituents are as stated on the label. The defendant company has such assays made from time to time by competent disinterested chemists and copies of such reports are made available to any state authorities. Like assays are made by the Federal Food and Drug Administration of foods which move in interstate commerce. (Finding 49.)

My views are well stated in *Carolee Products Co. v. Thomson, supra*, as follows:

"It seems incontrovertible that any possibility of fraud, sufficient in extent to be called public, in the sale of a harmless and nutritive food product may be avoided by regulations as to branding, disclosure of ingredients, kinds and marking of containers, requirement that eating places give notice to customers of its use as is already provided for oleomargarine, 1 Comp. Laws 1929, 5374, and otherwise. Stringent, even onerous, regulations to protect milk are valid.

"Regulations of various sorts have been found adequate for the protection of the public in the sale of other milk products. There has been no attempt, by testimony or [fol. 34] argument, to indicate that they would not be effective in the vending of Carolee and, in view of the fact that both of the elements of the product are lawful objects of sale in the State, only their union is prohibited and the completed product is harmless, the remedy necessary to avoid infringement upon constitutional rights is by way of regulation, not prohibition. *Weaver v. Palmer, supra*. Of course, if the product were harmful, the police power to prohibit would be greater." (pp. 181, 182.)

To the same effect is *Carolee Products Co. v. Bandana, supra*, in which the Nebraska court emphasized the fact that if the legislature has the power to suppress the sale

of Carolene, a healthful food product, it has the same power to prohibit the sale of any article on the market, as all are subject to the possibility of being misrepresented.

When the rights of the citizen come in conflict with actual public welfare, the rights of the former must, of course, yield. Manifestly that is fundamental and sound doctrine. I am, however, unwilling to see constitutional guaranties of the citizen's right to engage in a legitimate business whittled away when there is, no reasonable basis for believing that the public welfare probably could not be protected adequately by regulation of the business. It is not only important that the constitutional guaranty to the citizen to transact a legitimate business should be zealously protected by the courts. It is also most vital that the public should not be deprived of its right to purchase a desirable and healthful article of food which scientific research and discovery have made available to the public at a low cost and in a form easily preserved by the citizen in the lower income groups who is not blessed with refrigeration facilities. The sale of such an article may be in competition with another industry but, under proper regulation, it cannot reasonably be said to be in conflict with the public interest and welfare.

Smith and Hoch, JJ., join in the foregoing dissent.

COMMISSIONER'S REPORT

(The commissioner's conclusions of law appear in the body of the opinion.)

The commissioner's findings of fact are:

“(The first 11 Findings are taken and adopted from the ‘Stipulation of Undisputed Facts.’)

“(Unless otherwise indicated, references to the defendant mean defendant Carolene Products Company.)

[fol. 35] “(1) That J. S. Parker is the duly elected, qualified and acting Attorney General of the State of Kansas, and brings this action on behalf of plaintiff, for and on behalf of the State of Kansas.

“(2) The Sage Stores Company is a corporation organized under the laws of Kansas, doing business in the State of Kansas, with its principal place of business at Topeka, Kansas; that it is engaged in the general mercantile, produce and retail grocery business and that as such, at the

time of the filing of said petition in this case, was keeping for sale, and having in its possession with intent to sell and was selling the product hereinafter described, manufactured for and distributed by the Carolene Products Company, known as Milnot and Carolene.

“(3) That Carolene Products Company is a Michigan corporation organized for the purpose of engaging in the distribution and sale of the food product hereinafter described, known as Milnot and Carolene.

“(4) That Carolene and Milnot, the only products sold by this defendant in Kansas, are identical except for trade names; that Carolene and Milnot will be referred to hereinafter as defendant's product.

“(5) That defendant Carolene Products Company has not shipped into the State of Kansas or sold in the State of Kansas any product containing coconut oil or bearing the label criticized by this Court since the final decision and judgment of this Court in the case of *Carolene Products Company v. J. C. Mohler et al.*, Number 34307. That neither at the time of the institution of this suit nor at any time thereafter has the defendant The Sage Stores Company possessed or sold any of the product containing coconut oil heretofore manufactured by Carolene Products Company; and neither has said defendant The Sage Stores Company sold any of the product of the defendant Carolene Products Company bearing the label criticized by this Court since the final decision and judgment of this Court in the case of *Carolene Products Company v. J. C. Mohler et al.*, No. 34307.

“(6) That the sole ingredients of defendant's said product are sweet skim milk, refined cottonseed oil and natural vitamin concentrates; that there is no other ingredient in defendant's product except the foregoing; that defendant's product is manufactured in the modern, sanitary creameries of the Litchfield Creamery Company at Litchfield, Illinois, and at Warsaw, Indiana; that defendant's product is manufactured by mixing (a) sweet skim milk, (b) refined cottonseed oil and (c) natural vitamin A and vitamin D concentrates, and thereafter evaporated at the Litchfield Creamery Company with sanitary equipment in the same manner as sweet, whole or skim milk is evaporated in the manufacture of evaporated milk; that

after evaporation, at the end of which the volume of the mixture is reduced to 40 percent of the original volume solely from loss of water, the product is put up in hermetically sealed cans by modern and sanitary canning machinery; that after the canning, the cans and the product therein are thoroughly sterilized under steam pressure at 240° F. in the same manner as canned evaporated whole milk is sterilized; that defendant's product is rendered thereby absolutely free of all bacteria and so remains thereafter.

"(7) That each 14½ ounce can of defendant's product contains 2,000 U. S. P. units of vitamin A and 400 U. S. P. units of vitamin D.

"(8) That the fat soluble vitamins A and D, introduced in defendant's product are secured from nationally known, reputable laboratories which have extracted these vitamins from prime natural sources such as fish livers and prepared these concentrates of readily available vitamins for use in human food and for medical purposes.

"(9) The defendant's product is a compound containing approximately the following chemical constituents:

Fat, approximately	6.00%
Protein, approximately	7.75%
Carbohydrates, approximately	10.75%
Mineral salts, approximately	1.65%
Water, approximately	73.85%

"(10) That the uniform label used on defendant's product is as follows: (The commissioner's report referred to the page of the abstract containing pictures of the labels and the following description has been filled in by the court.)"

The labels on the cans in which the product is contained are identical except that one product is labeled Milnot and the other Carolene. These names appear in large bold type toward the top of the respective labels. Just above the name of the product appear the words—13 Fluid Ozs.—14½ Ozs. Net Wt. Immediately under the word, Milnot, or Carolene, appear the words, in prominent type—"It Whips." Between the name of the product and the words, "It Whips," appear the words, "Reg. U. S. Pat. Off."

Immediately under the above description appear in bold [fol. 37] type the words, "Not Evaporated Milk or Cream." Immediately to the left of the center and lower part of the label appear the words—"A compound of evaporated skimmed milk, cottonseed oil, vitamins A & D." Immediately to the right of the center and lower part of the label appear the words—"Contains not less than 2,000 U. S. P. Units vitamin A (from fish-liver oil) and 400 U. S. P. Units vitamin D (Activated ergosterol)."

Farther to the left of the center of the label above described appears the following:

All American Product

A high grade wholesome food product especially prepared for use in coffee, baking and for other culinary purposes.

Costs so little, that even the moderate budget can provide frozen desserts and whipped toppings.

Contains not less than 26 percent solids.

Fat, approximately	6.00%
Protein, approximately	7.75%
Carbohydrates, approximately	10.75%
Mineral salts, approximately	1.65%

Patents Pending

To the right of the center description previously noted appear pictures of three types of food and to the right of the pictures, the following:

For better flavor and more inviting appearance, serve Whipped Milnot with all desserts.

Whipped Milnot in your favorite recipes, or added to prepared mixes, makes smooth frozen desserts. Chill thoroughly before whipping.

Use Milnot, diluted with an equal amount of water, as a healthful, appetizing ingredient in all cooking and baking.

At the bottom of the entire label are the words—Manufactured for Carolene Products Co., Litchfield, Illinois, U. S. A. Copyright 1940, Carolene Products Co.

"(11) That Milnot and Carolene is a compound, manufactured and compounded from the following natural substances in their natural states: (a) skim milk, (b) refined cottonseed oil, and (c) natural concentrates of vitamins A

and D; that in the compounding of these natural products no other substance is added.

"That all persons handling and dealing in said product, from the manufacturer to the retailer, carefully compound, [fol. 38] sell and handle this product in hermetically sealed tins bearing labels as heretofore exhibited.

"(12) As the name implies, cottonseed oil is a product of the cotton seed. The oil is extracted from the seed by a crushing and pressing process. The crude cottonseed oil so obtained is refined with caustic soda, after which, it is bleached, usually with Fuller's Earth, and put through a process of destearinization (removal of the natural stearins). It is then hydrogenated (the addition of hydrogen to the unsaturated portion of fat) and deodorized, resulting in a colorless, tasteless product, called 'hydrogenated cottonseed oil.' It is this hydrogenated cottonseed oil which is used in the manufacture of defendant's product.

"Hydrogenated cottonseed oil is used extensively for edible purposes, such as in shortening, oleomargarine and salad oils and dressings.

"In a bulletin published by the Nutrition Service of the Child Hygiene Division of the Kansas State Board of Health, it is stated:

"Margarine, lard, salt pork, bacon squares and vegetable fats and oils are all suitable fats to add to the diet. Some of the margarines have been reinforced with added vitamins."

"Cottonseed oil is a wholesome, nutritious and harmless food, and there is no history of injury resulting from the use of cottonseed oil as a food for human consumption.

"(13) The statutory definition of skimmed milk is 'such milk as has had all or a portion of the butterfat removed.'

"According to reports published by the United States Department of Agriculture in 1939, 'almost fifty billion pounds of skim milk are fed to animals or destroyed every year,' and 'only about 12 percent of all the skim milk produced in the United States during the five-year period 1930-'34' was used in the manufacture of dairy products.' The experts who have testified in this case and the authorities generally agree that skim milk contains from one-half to two-thirds of the caloric value of whole milk.

"In the bulletin published by the Nutrition Service of the Child Hygiene Division of the Kansas State Board of Health, it is stated:

"Skim milk is a food of good value. The lack of cream should be compensated for by using extra butter, cod-liver oil and green, yellow and leafy vegetables. Buttermilk has the same food value as skim milk.

"Powdered skim milk has practically the same food value as fresh skim milk. One pound of milk powder, and a half-pound of butter equals in value five quarts of whole milk.

[fol. 39] "There is wide-spread malnutrition in the United States, including Kansas, and health authorities and nutritionists in general agree that it is desirable and in the interests of public health that more skim milk be used in the human dietary as an addition to our national milk supply instead of being fed to animals, used in the manufacture of plastics or wasted. Practically all of the skim milk available for the purpose, principally in powdered form, is now being sent to Britain for human consumption.

"Both dried and condensed skim milk are now in general use by bakers in the manufacture of bread and other bakery products, and it is used extensively in cooking, in the manufacture of ice cream and other dairy products.

"Skim milk is a wholesome, nutritious and harmless food, and there is no history of injury resulting from its use as a food for human consumption.

"(14) Vitamins are chemical compounds, found in a great variety of food stuffs, which are essential to life and the maintenance of good health. An adequate supply of the essential vitamins can be obtained by consuming a varied diet. The problem of insuring an adequate supply of vitamins has become more difficult in recent years because of modern refining and processing of food products. For example, the public demands white flour, which can only be obtained by removing the outer layers of wheat and the interior of the wheat kernel, which parts carry practically all of the vitamins found in wheat. It has therefore become a proper and accepted practice to fortify certain types of food, such as flour, margarine, chocolate syrup, chocolate bars and malted milk, by the addition of vitamin concentrates.

"(15) Cod-liver oil has been used for medicinal purposes for centuries. It was used to cure and prevent rickets as early as the eighteen-eighties. It was not until about 1913, however, that it was discovered that cod liver oil contains two factors now known as Vitamins A and D. It was not then possible to fortify food with cod liver oil because of its objectionable taste and odor. About 1930 it was discovered that halibut liver oil has a much greater potency of Vitamins A and D than cod liver oil, so that a dose of from 1 to 2 percent as much halibut liver oil as cod liver oil contains the same amount of these vitamins. Other species of fish are also excellent sources of Vitamins A and D. Oil is extracted from the livers of such fish, and by a process of refining is made suitable for use in food and pharmaceutical [fol. 40] products. By mixing the oil from two or more species, the desired potency of vitamins A and D is obtained.

"(16) Vitamins A and D obtained from fish livers in the manner above described are called natural vitamins and are what are used in the fortification of defendant's product. Natural vitamins are equal in nutrition to vitamins supplied through butter fat or other sources, and the fortification of foods with natural vitamins, including Vitamins A and D, is recognized by nutritionists as a proper practice.

"The bulletin published by the Nutrition Service of the Child Hygiene Division of the Kansas State Board of Health referred to above, has this to say about cod-liver oil:

"Cod-liver oil supplies vitamins needed for development of strong bones and teeth. Pregnant and nursing mothers may need this food. Infants, pre-school children, and school children may need it, too. All standard cod-liver oil is marked with the letters, U. S. P., which insures that it contains at least eighty-five units of vitamin D per gram. A teaspoonful makes about three grams. Cod-liver oil is a good source of vitamin A, which may be lacking in the diet unless a large amount of whole milk, eggs, and leafy vegetables are used. Cod-liver oil should be taken as prescribed by the family physician."

"There is no history of injury resulting from the fortification of food with natural vitamins.

"(17) The word 'wholesome,' as used in the field of nutrition and in these Findings, means a food or nutrient

which can be used by the body, is nontoxic and is useful as a food. 'Nutritious' means containing food value and 'nutritive value' is a term used to indicate the kind and quantity of nutrients contained in a food. The fact that a food is wholesome and nutritious does not mean that it is of itself an adequate or a complete food. A food may be both wholesome and nutritious, and yet be incapable of sustaining human life for a very long period. Disease can be caused by what the diet does not contain, as well as by what it does contain. For example, pellagra, which is rather common in some of the Southern states, is caused by long continued partially inadequate diet.

(18) The following is a tabulation of the known vitamins, showing their common name, chemical name, the disease associated with the deficiency of each and for what each is necessary:

[fol. 41] TABULATION OF KNOWN VITAMINS

Common name	Chemical name	<i>Disease associated with deficiency of Fat Soluble Vitamins</i>	
			<i>Necessary for</i>
Vitamin A Carotene may be converted to vitamin A in body	Vitamin A	Ophthalmia night blindness	Normal vision, resistance to infection, normal skin and lining of internal tissue
Vitamin D	Calciferol	Rickets	Normal utilization of calcium and phosphorus, strong bones
Vitamin E	Alpha-Tocopherol	Sterility, muscular dystrophy	Reproduction, cell division, muscle vigor

Choline in the form of phospholipid is fat-soluble, see below for function.

Common name	Chemical name	<i>Disease associated with deficiency of Fat Soluble Vitamins</i>	
			<i>Necessary for</i>
Vitamin K	Xapthoquinones	Hemorrhagic disease Faulty blood clotting	Normal functioning of liver to allow blood clotting

<i>Water Soluble Vitamins</i>			
Common name	Chemical name	Disease associated with deficiency	Necessary for
Vitamin C	Ascorbic acid	Scurvy	Normal blood vessels, healing of wounds
Vitamin B ₁	Thiamin	Beri beri, faulty carbohydrate utilization	Normal utilization of energy from carbohydrates

Vitamin B ₂ , G	Riboflavin	Cheilosis	Normal skin, nerve and eyes
Niacin	Nicotinic acid	Pellagra	Normal oxidation in tissues
Vitamin B ₆	Pyridoxine	Dermatitis and anemia	Not definitely known
Pantothenic acid	Calcium pantothenate	Dermatitis	May function in preventing gray hair
Choline	Choline Chloride	Fatty liver, hemorrhagic kidney	Normal, phospholipid formation
Biotin	Biotin	Spectacled eye, paralysis	Unknown
Inositol [fol. 42]	Inositol	Loss of hair	Unknown
Para-amino-benzoic acid	Same	Gray hair	Unknown
Recognized but not characterized			
Grass juice factor			
Folic acid			
Factors R and S			
Factor U			
Eluate Factor			
Milk growth factor for guinea pigs			
Vitamin M for monkeys			

"This tabulation also separates the vitamins into the fat soluble and water soluble groups. Upon the separation of cream from milk the fat soluble vitamins go with the cream and the water soluble vitamins remain in the skim milk.

"Of the fat soluble vitamins listed in the tabulation, vitamins A, D and K are undoubtedly essential in human nutrition. The experts are not agreed on vitamin E, and it is at least doubtful if this vitamin is essential in the diet of infants.

"Of the water soluble vitamins shown in the tabulation, vitamins C, B₁, B₂ or G, Niacin, B₆, pantothenic acid and choline are important in human nutrition. The function of the remaining water soluble vitamins is still unknown.

"(19) All known vitamins are present in whole cow's milk, but neither whole cow's milk nor any other single food is an adequate source of all the vitamins. Whole cow's milk comes closer than any other food to supplying the necessary vitamins for human life. The vitamin content of whole milk varies widely according to the cow, the season and the type of food fed to the cow. The vitamin A content

of ordinary evaporated milk varies from 1,000 to 2,500 units per 14½ ounce can, and the vitamin D content is about 35 units. The vitamin K content is small.

(20) Milk is not a perfect food for human beings. It is deficient in iron, copper and manganese, and in vitamin D. It is more complete than any other food, and cow's milk is the best known substitute for breast milk for the human infant. Pediatricists do not advise its use, however, as the sole diet of infants without modification or the addition of other substances. In the bulletin 'Infant Care' issued by the United States Department of Labor, offered in evidence by the plaintiff, it is advised that cod-liver oil be added to the whole milk diet of an artificially fed baby after it is two weeks old.

[fol. 43]. (21) Approximately four percent of the milk produced in the United States goes into evaporated milk. The sale of evaporated milk doubled in the fifteen years ending 1938, and since then the percentage of increase has been somewhat larger.

(22) The 'Organization of the Evaporated Milk Industry' under the Agricultural Adjustment Administration sends to its members price bulletins showing the prices paid for 3.5 percent raw milk at evaporated milk plants in the North Central states. The same organization sends to its members a schedule of 'minimum prices to be paid for raw milk according to the formula provided in the evaporated milk license made effective by the Secretary of Agriculture June 1, 1935.' The formula, in general, provides for a minimum price for milk testing 3.5 percent butterfat of its combined butter value (average wholesale price 92 score butter at Chicago) and cheese value (average wholesale prevailing price of 'Twins' on Wisconsin cheese exchange) plus 30 percent. Litchfield Creamery Company has consistently paid more than such average price, the percentage by which the price paid by it exceeded the average price fluctuating from year to year from a low of 4.71 percent at the Warsaw plant in 1938 to a high of 12.72 percent at the Warsaw plant in 1939. The operations of Litchfield Creamery Company have contributed substantially to the expansion and prosperity of the dairy industry in the vicinity of its plants.

"(23) Litchfield Creamery Company purchases annually from approximately 4,800 farmers and dairymen in the vicinity of its two plants the milk produced by 30,000 cows. In 1940 it paid for the whole milk so purchased \$2,068,483.62. It also purchased a small quantity of skimmed milk for which, in 1940, it paid \$57,078.09. In 1940, it manufactured over 1,100,000 cases of Milnot and 5,368,000 pounds of butter which it sold for \$1,609,121.42. Its daily intake of whole milk in 1940 was 300,000 pounds, as compared to 50,000 pounds in 1934.

"(24) The dairy industry is one of the most important in this state. As of April 1, 1940, there were 156,327 farms in Kansas, containing 48,173,635 acres, and of the total value of \$1,421,387,464. Seventy-six percent of these farms, or 129,213, produced milk in 1939. In 1940, 57.8 percent or more of the income from 11,545 farms came from dairying, and 8,400,000 acres of farm land were required for dairying. As of January 1, 1942, there were 786,000 cows and heifers two years old and older kept for milk production [fol 44] purposes in the state, and there were 484,548 people living on farms and partly dependent on the income from dairying. In 1941, there were in the state 1,650 cream stations, 268 cream brokerages and 396 creameries, ice cream manufacturers and pasteurizing plants, 35 cheese factories and 10 condenseries, which employed an estimated 2,500 people. An estimated 6,000 people are engaged in producing and distributing milk; 3,700 are engaged in buying cream and milk for resale. In 1940, Kansas produced 3,630,000,000 pounds of milk of a total value of \$40,905,000. The butter production in 1940 was 73,806,166 pounds. The 8,400,000 acres of land devoted to dairying and the buildings thereon are worth \$247,800,000; the dairy cows and heifers are worth \$57,378,000; the manufacturing plants represent an investment of \$10,000,000; and the cream stations and brokerages an investment of \$500,000 for a total investment in the dairy industry of \$315,678,000.

"(25) The quality of milk and dairy products is directly influenced by the economic condition of the dairy industry for the reason that, when milk cannot be produced and sold profitably, there is a tendency for dairymen not to keep their equipment in first-class condition, and not to feed the dairy cows an adequate supply of the proper food stuffs.

"A sound economy for the dairy farmer is therefore essential for the production of an adequate supply of pure, wholesome milk.

"(26) Undoubtedly the operations of the Litchfield Creamery Company have been of economic benefit and advantage to the dairy farmers in the vicinity of its two plants. It appears, however, that it is the only concern now engaged in the manufacture of filled milk. The patent on the process used has expired, and there is nothing to prevent other evaporated milk manufacturers from engaging in the business of manufacturing and selling filled milk if such business is legal. The business is a profitable one, and the evaporated milk companies will enter the field if and when filled milk can legally be manufactured and sold. While the operations of Litchfield Creamery Company have tended to increase the income of the dairy farmers in the vicinity of its two plants, it does not follow that the income of dairymen generally will be increased if the business of manufacturing and selling filled milk is engaged in on a competitive basis and on a nation-wide scale.

"Filled milk is made principally from skim milk, that is, milk from which the butterfat has been removed. The butterfat so removed is replaced in filled milk by a vegetable [fol. 45] oil, and the butterfat is thrown on the market for sale in some other dairy product such as butter. Since the price of milk is largely governed by the butter market, it necessarily follows that the free and unrestricted manufacture of filled milk would decrease the price paid for whole milk. The sale of filled milk would reduce the demand for evaporated whole milk, which would also exercise a depressing influence on the price paid for whole milk.

"(27) A product made of skim milk and coconut oil was sold under the name of 'Carolene' as early as 1917. The name 'Milnut' was first used in 1934. Shortly after the present product, which contains cottonseed oil instead of coconut oil, was placed on the market, the trade name 'Milnut' was changed to 'Milnot,' but the wholesalers and grocers used up their stocks on hand bearing the 'Milnut' label and defendant's cottonseed oil product was still being sold under the name 'Milnut' in Kansas at the time this suit was filed and was identical with the product now sold under the trade name 'Milnot.' Defendant's product is now being

sold under the trade names 'Carolene' and 'Milnot' in eighteen states.

"After the decision of this court in *Carolene Products Company v. Mohler*, 152 Kan. 2, a new label for use on the cottonseed oil product was prepared and submitted to the Federal Food and Drug Administration. Such label was revised to meet all objections and suggestions made by the federal administrator, and is the label now in use (Finding 10).

"(28) Defendant's product is packed in cases containing either 48—14½ ounce cans or 96—6 ounce cans. The cans are the same size and the number of cans per case are the same as are used in packing and shipping evaporated whole milk.

"(29) Defendant sells its product in the State of Kansas only to wholesalers through food brokers, who also handle other food products. Defendant makes no shipments to retailers or consumers. The broker obtains an order for defendant's product from a wholesale grocer, and submits it to defendant for acceptance or rejection. If defendant accepts the order, the product is shipped to the wholesaler in unbroken packages by rail or truck from Litchfield, Illinois. Defendant collects from the wholesaler and pays the food broker his commission. The broker has nothing to do with making delivery of the product to the wholesaler. The wholesaler distributes the product in the original packages to the retail grocer, and the latter breaks the packages and [fol. 46] sells to the consumer by the can. The wholesalers, on their own initiative, and at their own expense, have advertised the product in Kansas to some extent over the radio, and there has been newspaper advertising of the product in Kansas by both wholesalers and retailers. Defendant has sales agents and representatives who call upon the brokers and wholesalers in Kansas in furtherance of its business.

"(30) Since this suit was filed defendant has endeavored to protect the market for its product in the state of Kansas. During said time, the State Board of Agriculture has notified wholesalers and retailers handling defendant's product, both by letter and through its inspectors, that the sale of said product was in violation of the statute. In several instances, the retailers so notified have advised the whole-

saler from whom they purchased the product of having received such notice, and the wholesaler or the food broker, or both, brought the matter to the attention of defendant, and it, in a number of instances, has written letters from its principal office in Litchfield, Illinois, to retailers in Kansas, to the effect that the constitutionality of the law is being tested by a case now pending in Kansas, and that it is continuing the sale of its product during the pendency of the litigation, and that it does not feel that there will be any prosecution of retailers for selling the product during the pendency of the litigation, but that 'If they should arrest you, or any other retailer, for selling our product, Milnot, we will pay all costs of such litigation, provided you plead not guilty and give us an opportunity to defend you in the case.' In instances where prosecutions have been instituted against retailers for selling defendant's product, attorneys employed and paid by defendant have appeared and defended such retailers. Some of the retailers so notified have discontinued the sale of defendant's product, but some have continued to sell it.

"(31) During the years 1940 and 1941, a deputy dairy commissioner called on a number of retail grocers in the state for the purpose of investigating the sale of defendant's product. The deputy's method of approach was to ask a clerk for cheap canned milk. Many of the 28 stores visited which were selling defendant's product displayed it with or near evaporated milk. In some of the stores the clerk first recommended defendant's product, and in several instances the clerk either first recommended some brand of evaporated milk or some brand of evaporated milk and defendant's product. Many of the clerks either informed the [fol. 47] deputy of the nature of the product or read to him from the label, but a majority did not disclose the nature of the product.

"During the same period, three other deputies made surveys in their territory to see how the product was being displayed. In most instances, it was displayed on shelves with or near evaporated milk.

"(32) Most of the housewives who use defendant's product know, at least in a general way, what it is. The evidence indicates, however, that some do not. In a majority of cases, housewives call for the product under its trade name, but some call for it as 'Milnot Milk,' and some of the

retail grocers who testified in this case so referred to it.

“(33) Nothing is added to defendant's product to give it an artificial taste or color, or to give it a resemblance to any other food or food product. Since the principal constituent of the product is skim milk, and the refined, hydrogenated cottonseed oil which is added is odorless, tasteless and colorless, the product necessarily closely resembles evaporated whole milk in taste, consistency, odor and appearance. The average consumer could not distinguish between them by taste, smell or appearance.

“(34) Various retail grocers have advertised defendant's product in their local newspapers on their own initiative and at their own expense. The following are statements which have appeared in such newspaper advertisements:

- “ ‘Milnut, So Rich it Whips,
10 Tall Cans—59c’
- ‘Milk—Milnut, It Whips—Per Can 5c’
- ‘Milnut. Use it Like Evaporated Milk
in Coffee or in Cooking. 3 Tall Cans 19c’
- ‘Milnut, So Rich it Whips, Tall Can 5c’
- ‘Milk—Caroline Brand
4 Tall Cans 23c’
- ‘Milk, Milnut—It Whips
3 cans—17c’
- ‘Carnation Milk—3 Tall Cans—20c’
- ‘Milnut—4 Tall Cans—25c’
- ‘Milnut Milk—Large Cans
4 for 25c’
- ‘Milnut Canned Milk, Large Can 6c’
- ‘Milk—Caroline 4 Lge. Cans 25c;
12 Cans 69c’

[fol. 48] “There is nothing in the record to indicate that defendant knew of or in any way authorized or encouraged this form of advertising. To the contrary, defendant puts in the cases of its product a ‘Notice,’ in which it is stated, among other things, that ‘It is improper to advertise, represent, display or sell either of these products as milk, or evaporated milk or cream.’

“(35) At the time the evidence relating thereto was taken, wholesalers in Kansas were paying \$3.10 per case for defendant's product and selling to retailers for \$3.50 per

case. At the same time the wholesaler was buying Carnation evaporated milk for \$3.72 per case and selling to the retailer for \$3.87 per case, and was buying Page's evaporated milk for \$3.57 per case and selling it for \$3.77. The average retail selling price of defendant's product is approximately one cent per can less than that of evaporated whole milk.

“(36) Defendant furnishes its food brokers in Kansas with printed recipe books, which the food broker distributes to the retailers. These books contain 60 recipes, in all of which defendant's product is used as an ingredient instead of milk or cream. Some of the titles of the recipes are: Boston Cream Pie, Cream Pie, Strawberry Ice Cream and Creamy Fudge. On the back of the book appears the statement that ‘Milkut can be used for all culinary purposes wherever you now use whole milk, cream, whipping cream, or a canned milk.’

“(37) The openings in fat molecules have the ability to absorb oxygen, and such absorption of oxygen forms a compound with a rancid odor. In hydrogenated cottonseed oil these openings in the fat molecules have been closed so that oxygen cannot enter, and hydrogenated cottonseed oil therefore withstands the development of rancidity to a greater degree than butterfat, and hydrogenation has greatly widened the field for the use of cottonseed oil.

“(38) Defendant's product is used principally by families in the low income group. It is used as a substitute for milk and cream and has no other use. It has had good customer acceptance. The evidence clearly shows that the housewives who have used it prefer it to evaporated whole milk. Among the reasons given for such preference are that it has a better taste than evaporated milk; that it will whip and so can be used as a substitute for whipping cream; that it is cheaper and that it will keep longer (as heretofore found, hydrogenated cottonseed oil has a greater resistance to rancidity than butterfat), than evaporated whole milk, which is important to families who lack refrigeration facilities.

[fol. 49] “(39) A study of the nutritional status of the school children of the state made under the supervision of the State Board of Health indicates that approximately 25 percent of the school children suffer from malnutrition.

The principal deficiency is in food rich in nutrients. The principal reasons for the nutritional deficiency are: lack of adequate income with which to purchase proper foods; lack of information as to what are the proper foods; and lack of interest. The Extension Service of Kansas State College and the Nutrition Service of the State Board of Health are carrying on educational programs for the purpose of teaching housewives the best foods to buy with the amount of money available. The workers for these Services oppose the sale of defendant's product on the ground that it is not an adequate substitute for whole milk, and should not be sold unless the housewives who use it are taught the necessity of using other foods to supply the nutrients present in whole milk but not in defendant's product.

"(40) There are several baby foods on the market, such as S. M. A., a concentrated liquid derived from cow's milk, the fat of which is replaced by animal and vegetable fat, including cod liver oil; Olac, a dried mixture of skim milk containing olive oil and halibut liver oil; Sobee, which contains soybean flour; and Mull-Soy, which also contains soybean flour. While there is no law prohibiting the sale of these products by grocers (assuming that they do not come under the statute under consideration), they are ordinarily sold by druggists and are ordinarily fed to babies only on the advice and under the directions of a physician. They are usually sold in powdered form, and do not resemble defendant's product or evaporated milk in packaging, color or consistency. Such preparations are ordinarily fed only to sick babies who cannot tolerate whole cow's milk. Pediatricists usually attempt to get such infants back on a whole milk formula as soon as possible.

"(41) All fats, both animal and vegetable, are composed of three elements—hydrogen, oxygen and carbon. The combination of these elements determines the character of the fat.

"Practically all natural fats, animal and vegetable, including both butterfat and cottonseed oil, are tri-glycerides (three fatty acids attached to each glycerin molecule). No other fat approaches butterfat in the number and assortment of fatty acids, of which it contains nineteen. Cottonseed oil contains six fatty acids.

“(43) Both parties have submitted tables comparing the [Col. 50] chemical composition of evaporated milk and defendant's product. (Plaintiff's appears as Exhibit ‘L.I.’, page 1848 of the transcript, defendants' commencing on page 56 of their ‘Statement, Brief and Argument.’) Both tables are illustrative, but neither is exactly accurate. The fact is that no complete, accurate analysis of the same sample of milk or buttermilk has ever been made. Many different analyses have been made for different purposes from different samples at different times, and the composite of these analyses is not an accurate analysis of the whole by reason of the wide variation in the samples analyzed. Neither has any complete analysis been made of defendant's product. Further, as will hereafter appear, the experts who testified, and the authorities cited, are not in agreement as to the composition of either evaporated whole milk or defendant's product. Under these circumstances, no accurate comparison of the chemical composition of evaporated whole milk and defendant's product is possible.

“(44) Phospholipins are not true fats, but are similar to fats, and are necessary in human nutrition. They are utilized in building body tissue, particularly nerve sheaths.

“Whole milk contains phospholipins. There is testimony in the record that ‘most of the *phospholins* will stay in the skimmed milk.’ There is equally positive testimony to the effect that ‘practically all of the phospholipins accompany the butterfat phase. They are removed from the skimmed milk.’

“(45) Sterols are solid alcohols which are essential in human nutrition. Sterols are found in whole milk, and upon separation of the cream from the milk largely go with the cream. Sterols are also present in cottonseed oil, and are therefore present in defendant's product. There is testimony, however, that plant sterols are not absorbed by the body as readily as animal sterols.

“(46) As has been found, Vitamin E is fat soluble. One of the authorities states that ‘Refined and hydrogenated cottonseed oil are also excellent sources of the vitamin (E). Cottonseed oil is as satisfactory as wheat germ oil for the preparation of concentrates (of Vitamin E).’ To the contrary, another authority states that ‘The vegetable fats as

a rule contain but small quantities of fat soluble Vitamins A, D and E. After refining and deodorization, they are usually devoid of vitamins. One of the witnesses testified that Vitamin E is removed with the cream and would not be replaced in defendant's product by the addition of cottonseed oil.

[fol. 51] "(47) There is testimony in the record to the effect that the human is capable of manufacturing the fat soluble Vitamin K in the intestinal tract; that it has a water soluble phase as well as the fat soluble phase; that if there is any Vitamin K in whole milk, the quantity is so small as to be immeasurable. On the other hand, there is testimony that milk contains a sufficient amount of Vitamin K to prevent hemorrhagic disease in young infants.

"(48) Not all of the vitamins which are necessary in human nutrition have been identified. Numerous attempts have been made to rear various types of animals on diets containing no vitamins except those which have been identified. All such attempts have failed.

"The human being may obtain an adequate supply of these essential but unknown vitamins by consuming a varied diet of natural food stuffs.

"(49) The Babcock test is by statute a standard test in Kansas for the purpose of determining the percent of butterfat in milk and cream. This test would not show whether the fat in a product such as Milnot was butter fat or a vegetable oil. There are other tests, however, by which a competent food chemist can readily determine whether a fat in a product is butterfat or vegetable oil, and by which they can readily determine whether a vegetable oil or fat is coconut oil or a hydrogenated oil of other sources. It would not be difficult for a competent food chemist to analyze defendant's product for the purpose of determining whether its constituents are as stated in the label. Carolene Products Company has such assays made from time to time by a competent disinterested chemist, and copies of such reports are made available to any state authorities. Like assays are made by the Federal Food and Drug Administration of foods which move in interstate commerce.

"(50) Biochemists have been largely responsible for the developments in the field of nutrition. Their experiments

are performed with animals which can be sacrificed. The biochemist feeds his test animals the food or product under consideration and observes and studies the results. A physician concerned with the health of his patient, and interested in the patient's recovery, obviously cannot give his patient a new and untried diet. Information obtained by the biochemist from his experiments on animals is passed on to the physician, and the latter incorporates it in his treatment of human beings. An outstanding example was [fol. 52] the discovery by Doctor Elvehjem (who testified in this case) of the fact that nicotinic acid was active in curing black tongue in dogs, and physicians immediately applied this knowledge to the treatment of pellagra. (Not all of the results obtained by animal experimentation are applicable to human beings, but they cannot safely be ignored. A pediatricist would proceed very slowly and cautiously in feeding to a baby food which had proved to be unsatisfactory in the diet of animals.

"(51) Distinguished scientists in the field of biochemistry testified in this case. From rat experiments conducted by them, plaintiff's witnesses were of the opinion that rats fed on butterfat made better and more efficient gains during the first two or three weeks on the experiment than rats fed vegetable oils homogenized into skim milk, and that rats 'did much poorer' on the vegetable oil diet than the rats on the butterfat diet. It was their conclusion from such experiments that butterfat contains a superior growth-promoting property, as compared to the vegetable oils, probably a long chain saturated fatty acid (or acids) present in butterfat in small amounts, and not present in certain vegetable oils, including cottonseed oil.

"One of the biochemists who testified for defendants was of the opinion, based on rat experiments conducted by him, that the nutritive value of evaporated milk and defendant's product is equal. The others were critical of the rat experiments conducted by plaintiff's witnesses, and disagreed with the conclusions drawn therefrom.

"Another scientist, who testified for the plaintiff, had conducted experiments on calves for the purpose of finding a substitute for butterfat in the diet of young calves. He testified that in average gain in weight, as well as in general well being, 'the calves fed butterfat excelled those in all other groups,' which included a group fed cottonseed oil.

“(52) In general, the testimony of defendants’ witnesses was to the effect that the product in question is a wholesome, nutritious, useful and harmless food for human consumption, including adults, children and infants. Many of such witnesses prefer the product to evaporated whole milk, principally on account of its more constant and adequate content of Vitamins A and D. Some of the physicians who testified have used such product in the diet of infants under their care, and prefer it to evaporated whole milk or the special purpose infant foods.

“In general, plaintiff’s witnesses are of the opinion that the animal experiments have shown that filled milk is inferior to evaporated whole milk in the diet of animals; that ‘there is a difference between vegetable oils and butterfat which can be demonstrated on animals’; that the substitution of vegetable oil for butterfat in the diet of infants and children should not be allowed ‘until there has been a large human experience with babies’; and that if filled milk gets into the channels of infant nutrition, it should be prohibited.

“(53) The expert witnesses who testified in this case include chemists, biochemists, physiologists, professors in medical school, public health authorities and physicians specializing in pediatrics and nutrition. They are among the most eminent men in America in their fields. Their ability and integrity are not open to question.

“In the foregoing findings, some of the respects in which such experts disagree have been pointed out for the reason that (under the view the commissioner takes of the law) the fact that the experts do so disagree is itself a material fact. Such differences of opinion are due in part to the recognized human tendency to draw different conclusions from the same facts and in part to the fact that the experts were testifying on subjects concerning which the store of knowledge is still far from complete. New discoveries are constantly being made. At the time the evidence was being taken, an important rat experiment was being conducted on a larger scale than any heretofore attempted.

“The case, however, must be determined in the light of present-day knowledge, as shown by the evidence introduced.

“Defendant’s product is wholesome, nutritious and harmless, in the sense that it contains nothing of a toxic nature.

but it is inferior to evaporated whole milk in the content of fatty acids, phosphopins, sterols and Vitamins E and K, all of which are essential in human nutrition, with the probable exception of Vitamin E in the diet of infants. In addition, evaporated whole milk contains a superior growth-promoting property, found in butterfat and not in cottonseed oil, essential to the optimum growth of infants.

“These deficiencies in defendant's product, as compared to evaporated whole milk, are largely made up from other sources when the product is used as a substitute for whole milk or evaporated whole milk in the diet of adults who consume a varied diet. When defendant's product is used as a substitute for whole milk or evaporated whole milk in the diet of infants and children who do not consume a varied diet, such deficiencies are not made up, and the diet is par-[fol. 54] tially inadequate. Defendant's product does 'get into the channels of infant nutrition.'

“(54) Plaintiff has requested a finding of fact to the effect that the evidence does not show any intentional or arbitrary discrimination against defendant's product in the manner in which the statute has been enforced.

“The defense of intentional and arbitrary discrimination in the enforcement of the statute was expressly pleaded by defendants in their answers, and was stricken therefrom by the court on motion of the plaintiff. Defendants were therefore not permitted to introduce evidence in support of this plea.

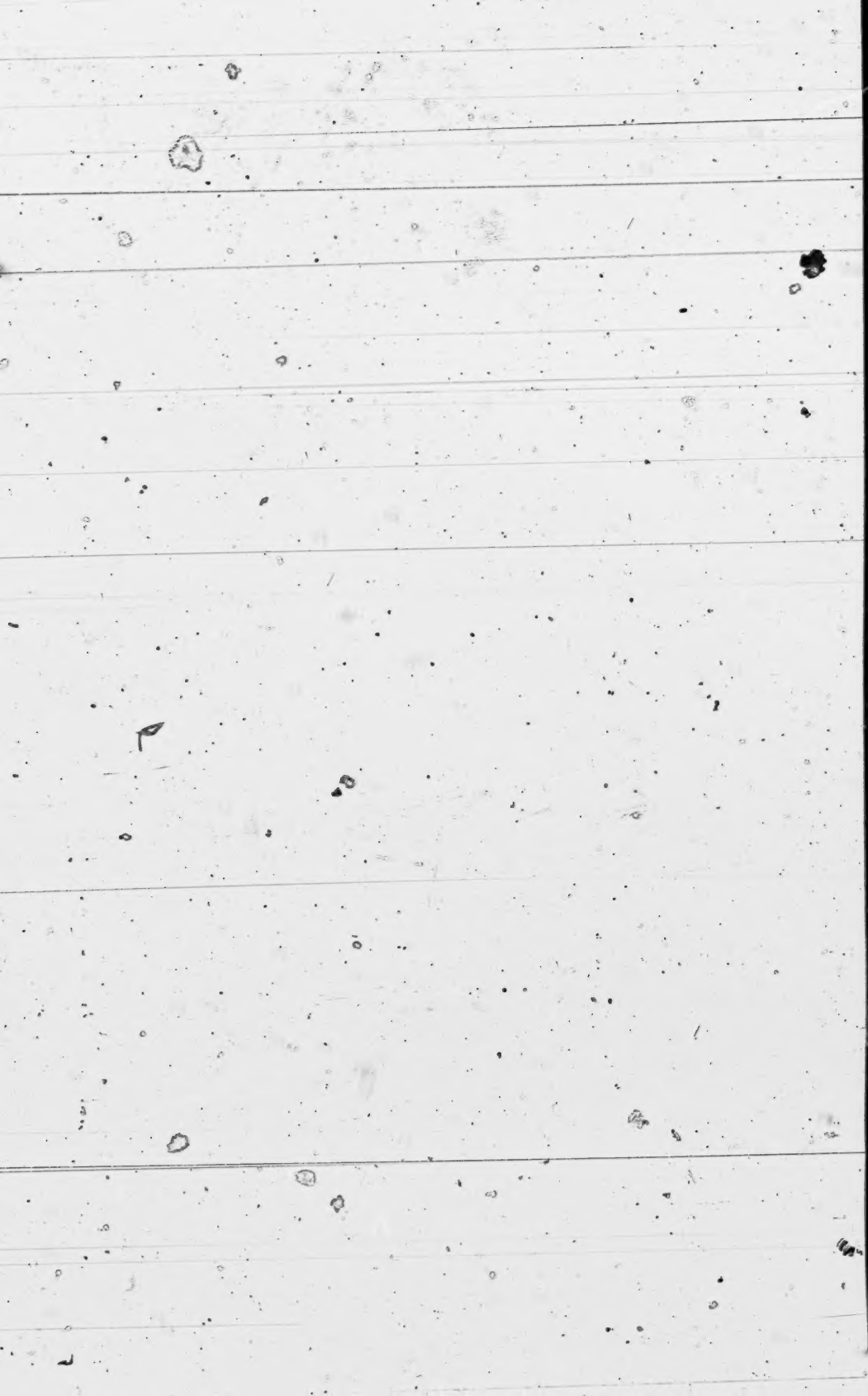
“Under these circumstances, it would not be proper to make a finding on the subject of discriminatory enforcement.

“(55) The defense of arbitrary and unreasonable discrimination in the statute itself stands on a different footing. This defense was raised by defendants in supplemental answers filed with the consent of the court after the introduction of evidence had been concluded. In allowing the filing of such supplemental answers, the court authorized the commissioner in his discretion to hear additional evidence pertinent to such defense. Both parties advised the commissioner, in response to his inquiry, that they did not care to introduce additional evidence. It is therefore proper to make a finding on this defense, which is an issue under the pleadings as now framed.

The evidence does not show any intentional or arbitrary discrimination against defendant's product in the express terms of the statute.

"(56) No evidence was offered for the purpose of showing that defendant The Sage Stores Company has violated the law in any particular except as charged in this case, and the State announced that if the findings and judgment are in its favor, it will be satisfied with a limited ouster as to The Sage Stores Company."

[fol. 55] Be it further remembered; that on the 22nd day of October, 1943, there was filed in the office of the Clerk of the Supreme Court of the State of Kansas, a Motion for Rehearing, prepared by the Defendants herein, a copy of which Motion for Rehearing is in the words and figures as follows, to-wit:



[fol. 703-705] IN THE SUPREME COURT OF THE STATE OF KANSAS.

No. 35,143

THE STATE OF KANSAS EX REL. A. B. MITCHELL (substituted),
AS ATTORNEY GENERAL, *Plaintiff*,

VS.

THE SAGE STORES COMPANY, a corporation, and CAROLENE
PRODUCTS COMPANY, a corporation, *Defendants*.

DEFENDANT'S MOTION FOR REHEARING—Filed October 22, 1943

The defendants herein respectfully move the Court to grant a rehearing in this case, and in support of this motion submit the following:

I

The first ground upon which we contend that a rehearing should be granted, is that Judge Parker, by reason of having brought the case as attorney general, should not have participated in the decision as a member of this Court. We will endeavor to show what we believe to be not merely strong but compelling reasons why Judge Parker was disqualified to sit in judgment on this case. If Judge Parker is disqualified, there being an equal division of the remaining judges of the Court, and the case being an original proceeding [fol. 706] in this Court, no decision has been reached and hence no judgment can be rendered at this time.

A motion for a rehearing, which is of course never filed by any litigant except one who upon the then status of a case is the defeated party, of necessity is a petition to the judges who constitute the personnel of the Court to reconsider and upon such reconsideration to change their views. The necessity for reconsideration in the instant case is a compulsory necessity if Judge Parker is in fairness to be held disqualified, for, otherwise there is no decision.

After we have discussed herein the question of Judge Parker's qualification to participate in the decision, we will urge with conciseness other grounds for challenging the soundness of the decision announced in the majority opinion.

The framers of our State Constitution as well as the framers of our Federal Constitution, adopted as the very

foundation of these great instruments of liberty, the concept that the powers essential to governments should be distributed among three separate and independent bodies—the legislative, the executive and the judicial.

After stating this proposition in *State v. Johnson*, 61 Kan. 803, 60 P. 1068, this Court quoted the language of Montesquieu as follows:

“There can be no liberty, . . . if the power of judging be not separated from the legislative and executive powers. . . . Were the power of judging joined with the legislative, the life and liberty of the subject would be exposed to arbitrary control, for the judge would then be the legislator. Were it joined to the executive power, the judge might behave with all the violence of an oppressor.”

No one would suggest that while he actually held office as one of the duly elected members of the executive department [fol. 707] ment of his State (Const. Art. 1, Sec. 1), the attorney general might serve also as a member of the judiciary department by sitting in judgment upon a proceeding of this important character which, in the exercise of his discretion as a member of the executive department, he had decided that the public interests required to be brought. This would clearly be the very evil which Montesquieu had in mind when he wrote, “There can be no liberty, . . . if the power of judging be not separated from . . . the executive power.”

Nor can it fairly be contended within the bounds of reason that the principle involved is in any respect altered because just at the moment when the case to be judged has come before the Court for determination the individual has laid aside the garments of the executive and has donned the robe of the judiciary.

Of the seven members of the Court, Justices Wedell, Smith and Hoeh dissented from the majority opinion, Judge Wedell writing a very strong dissenting opinion in which the other two judges concurred. While the Justices who joined in the majority opinion are not listed, Justice Parker must have been counted as casting his vote with the majority. We thus have the remarkable situation of the deciding vote to constitute a majority of the Court in favor of the plaintiff being cast by a judge, who as Attorney Gen-

eral of the State was the original relator who brought the suit.

When this case was called for oral argument and Judge Parker retained his seat, we assumed that he did so as an interested-spectator who desired to hear the arguments because it was an important case in which he had been the relator plaintiff. It did not enter our minds that he would participate in the decision of the Court.

The Court, no doubt, in permitting Justice Parker to participate in the decision of this case had in mind as precedents the cases of *Barber County Commissioners v. Lake State Bank*, 123 Kan. 10, 254 P. 401, and *Actna Ins. Co. v. [fol. 708] Travis*, 124 Kan. 350, 259 P. 1068, both of which cases arose shortly after the Honorable Richard J. Hopkins had become a member of this Court following two terms as Attorney General of the State. We submit, however, that in neither of these cases was the situation fairly comparable to that which has arisen in the present case.

In the case of *Barber County Commissioners v. Lake State Bank*, *supra*, the syllabus reads:

"An attorney-general who is elected to the supreme court is not disqualified to sit in an action commenced after he was elected to the supreme court, but which involves a principle of law and an issue of fact which were embraced in an action in which he as attorney-general took part and which was tried and determined before the second action was commenced."

It will be noted that the *Barber County Commissioners* case was filed after Judge Hopkins had left the Attorney General office, and that he was at no time attorney of record in the case. The ground on which it was urged that he should be disqualified was that he had while attorney general passed upon questions of law that were involved in the case in which he later sat as Supreme Court Justice.

The basic ground of the opinion is found in the following quotation in 123 Kan. 13:

"If an attorney-general, afterward elected to the supreme court, is disqualified to sit in a case in which some legal question involved was passed on by him or his office as attorney-general, there will not be many cases before the supreme court in which he can take part, be-

cause a large part of the entire field of law will have been under examination and discussion at some time during his two consecutive terms of office as attorney-general."

[fol. 709] The Aetna Insurance Company case simply involved the routine defense of a state official who was made a defendant in a suit brought by a private litigant. The essential facts in the Aetna Insurance Company case are thus stated in the opinion:

"In 1922, after the order (of the superintendent of insurance) complained of in this case had been made, plaintiffs filed this action in the district court, and summons was served upon Mr. Travis. He took the summons to Mr. Rankin and asked him to look after the case on behalf of the defendant. Mr. Rankin advised attorney-general Hopkins that the suit had been brought and was instructed to handle it for the defendant. * * * The statements of Mr. Rankin and the other assistant attorneys-general are to the effect that neither the facts in the case nor the merits of the order made by the superintendent of insurance, nor the facts on which such order was based, nor the manner of conducting the litigation, were discussed with Attorney-general Hopkins, nor directed by him."

The instant case, as we will endeavor hereafter to demonstrate, involves much more than the routine defense by the attorney general of a state official who is made a defendant in a suit brought by a private litigant. The present case is an original proceeding in this court instituted, it must be assumed, after mature consideration, by the chief law officer of the Commonwealth, whereby the state in its sovereign capacity asks this Court to forfeit the corporate franchises and privileges of a corporation chartered under authority of the legislature, and to oust, restrain and enjoin another corporation from doing any business within the State of Kansas.

In the instant case, the relator who filed the suit was "Jay S. Parker, as Attorney General." All pleadings and briefs in this Court until the order of substitution was made on [fol. 710] March 12, 1943, designated the plaintiff as "State of Kansas, ex rel, Jay S. Parker, as Attorney General." The Commissioner's findings of fact and conclusions of law

were not filed and reported to this Court until December 15, 1942, after the election of Attorney General Parker to membership on the Court. The plaintiff's requested findings of fact and conclusions of law were transmitted to the Commissioner on August 12, 1942. *These findings of fact and conclusions of law were requested by the plaintiff over the signature of Jay S. Parker as Attorney General, and they embody in substance the findings of fact and conclusions of law as made by the Commissioner, and later adopted and approved by this Court.*

It is true that the handling of the actual trial work in the case, including the taking of evidence before the Commissioner, was delegated to two special assistant attorneys-general. However, since *"the discretion of the attorney general in determining what the public interests require as to bringing an action against a domestic business corporation or its officers is absolute, and cannot be made the subject of inquiry by the courts,"* (2 R.C.L. 919, quoted by this Court with approval in *State v. Finch*, 128 Kan. 665, l.e. 669) it is not conceivable that the important duty of exercising the discretion vested in the attorney general of determining what the public interests require as to the bringing of such a proceeding is delegated to two special assistant attorneys-general. Before instituting a proceeding of this important character, where the State proceeds in its sovereign capacity to forfeit franchises it has created, the facts and the law must of necessity be investigated and weighed with most serious care and caution. When such investigation and study have been given, firm and lasting convictions both as to facts and law must be formed. Surely the duly elected chief law officer of the State cannot take the position that the investigation and study and the convictions based [fol. 711] thereon are not personal to him.

In *State v. Finch*, 128 Kan. 665, 280 P. 910, this Court said on page 667:

"In our scheme of government the attorney general is the chief law officer, subject only to the direction of the governor and the legislature."

In the same case, on page 668, the Court, after quoting the statute defining the duties of the attorney general, says:

"And so, while primarily the governor is charged with the execution of the law, next to him the attorney

general is the chief law officer of the state. Some observations concerning the development of the attorney general's duties and powers are not amiss."

In the opinion last referred to this Court then quotes extensively and with approval from various authorities, including the article in Ruling Case Law on Attorneys-General. The following quotation from Ruling Case Law from which we have already quoted in part appears at the bottom of page 669 of the Court's opinion, and is taken from 2 R.C.L. 919:

"It is generally acknowledged that the attorney general is the proper party to determine the necessity and advisability of undertaking or prosecuting actions on the part of the state. Thus it has been held that the discretion of the attorney general in determining what the public interests require as to bringing an action against a domestic business corporation or its officers is absolute, and cannot be made the subject of inquiry by the courts."

In *State, ex rel. v. City of Newton*, 138 Kan. 78, 23 P. 2d 463, this Court said on pages 80-81:

[fol. 712] "R.S. 60-1602 authorizes an action to be brought in the supreme court, or the district court, when anyone shall unlawfully hold or 'claim any franchise within this state,' and the next section authorizes the action to be brought by the attorney-general or the county attorney in the name of the state."

It will be noted that Section 60-1603, G.S. Kan. 1935, authorizes *quo warranto* proceedings of this character to be *"brought by the attorney general . . . of his own motion."*

In *State, ex rel. v. Stockyards Company*, 94 Kan. 96, 145 P. 831, the Court said on page 99:

"We believe, however, that where a corporation is engaged in a business not authorized by the law, and the state by the proper executive officer makes objection, the court has no alternative, but must decree its discontinuance."

In *Telephone Co. v. Telephone Ass'n.*, 94 Kan. 159, 146 P. 324, the Court says on page 162:

"Ordinarily the usurpation of a corporate privilege or public franchise can only be challenged by an action in the name of the state by its proper officer.

"In Kansas that proper officer would be the county attorney. (Gen. Stat. 1909, Sec. 2226; *The State, ex rel. County Attorney v. Eble*, 77 Kan. 179, 93 Pac. 803.) *The attorney general is likewise frequently called upon to challenge the exercise of some unauthorized corporate power.*"

Article 1, Section 1, of the Kansas Constitution provides the "executive department shall consist of" seven designated state officers *to be chosen by the electors of the State*, one of whom is the attorney general.

Section 75-702 G.S. Kan. 1935, provides:

[fol. 713] "The attorney general shall appear for the state, and prosecute and defend all actions and proceedings, civil or criminal, in the supreme court, in which the state shall be interested or a party. . . ."

Section 17-4003, G.S. 1943 Supp., reads:

"The jurisdiction to revoke articles of incorporation of domestic corporations and to dissolve such corporations for abuse, misuse or nonuse of their corporate powers, privileges or franchises, shall be vested in the courts. *It shall be the duty of the attorney general in such cases to proceed for such purposes by proper action in the proper court.*"

In *State, ex rel. v. National Industrial Ins. Co.*, 125 Kan. 119, 263 P. 1060, the Court said on page 122:

"The public has an interest in the doings of the corporation. It was created by the state with franchises to be exercised fairly and honestly and over which the state retained visitatorial power. It is carrying on a business subject to regulation by the state and its exercise of the franchises and powers granted is a matter of public concern. According to the averments of the petition and the evidence produced at the trial, the defendant was abusing its powers and transacting busi-

ness with its policyholders in an unfair manner, and hence *the state had a right through the attorney general to maintain quo warranto for the correction of such abuses.*"

It will be noted from the foregoing Kansas statutes and decisions of this Court that the filing of proceedings in this Court on behalf of the State of Kansas to correct corporate abuses or to forfeit corporate rights is a duty and function vested specifically and particularly in the attorney general, as the chief law officer of the state. It is also to be noted that under the provisions of the Constitution the person who [fol. 714] holds the important office of attorney general "shall be chosen by the electors of the state." Any suggestion that the important duty of instituting proceedings of this drastic character which can be brought by the State only in its sovereign capacity, is not an individual and personal act of the person who has been elected to the office of attorney general, but is a mere routine procedure of his office, like the giving of opinions on questions of law or defending state officials who are brought into court at the suit of private litigants, would unduly degrade the dignity of the office of attorney general. Any suggestion that a suit of this character would be commenced and prosecuted without the attorney general having in advance of the commencement of the suit thoroughly explored the facts and the applicable law and reached a definite personal conclusion both on the law and the facts would involve an assumption that would do violence to all rules of logic.

We recognize the fact that the odd number of seven judges was specified by the Constitution in order to avoid an equal division of the Court. We recognize also the fact that this Court has many cases to consider, and that for the economical and orderly dispatch of its business finality of disposition of cases through majority decisions of the Court is not only a desirable but an important end to attain.

However, the attainment of such an end should never be justified at the expense of a litigant by depriving him of the historical and constitutional right to have his case decided by a thoroughly impartial and disinterested tribunal. The rights of the litigant would seem clearly to outweigh any such considerations as those suggested.

We are sure that Judge Parker, insofar as he has participated in the decision in this case, must have done so with

reluctance, and without any conscious prejudicial influence arising out of his connection with the institution and prosecution of the case. However, as Mr. Justice Peckham of the United States Supreme Court said in *Crawford v. United States*, 212 U.S. 183, 53 L. Ed. 465, 29 S. Ct. 260, 1c. 29 S. Ct. 265:

"Bias or prejudice is such an elusive condition of the mind that it is most difficult, if not impossible, to always recognize its existence, and it might exist in the mind of one (on account of his relations with one of the parties) who was quite positive that he had no bias, and said that he was perfectly able to decide the question wholly uninfluenced by anything but the evidence."

As Mr. Justice Day in his opinion in *McGuire v. Blount*, 199 U.S. 142, 50 L. Ed. 646, 26 S. Ct. 1, said (1c. 26 S. Ct. 2):

"Courts . . . should scrupulously maintain the right of every litigant to an impartial and disinterested tribunal for the determination of his rights."

II

A rehearing should be granted because the Court has failed to apply the rule established by the United States Supreme Court in the case of *Wearer v. Palmer Bros. Co.*, 270 U.S. 402, 46 S. Ct. 320, 70 L. Ed. 654, that when a product is shown (as found by the Commissioner in this case) not to be injurious, but to be wholesome, nutritious and harmless, the business of producing and selling such product is legitimate and useful and, while subject to all reasonable regulation, a statute which absolutely prohibits the business is purely arbitrary and violates the due process clause of the Fourteenth Amendment to the Federal Constitution.

In maintaining our defense in this case, although of course there were incidental points involved and covered, the basic theory was as follows:

[fol. 446] 1. *On the factual side of the case:*

(a) Demonstrate by testimony of the highest type—nationally known and recognized nutritionists, physicians, pediatricians, biochemists and dietitians—that our product is not injurious but is wholesome and nutritious and of benefit to the consuming public and that it contains in a greater

degree than does whole milk the essential vitamins A and D whose absence from filled milk when the statute was enacted constituted the rationale of the legislation.

(b) Demonstrate by convincing evidence that the label used accurately and truthfully discloses the exact constituents of the product and that the defendants have exercised all reasonable means to avoid any fraud or deception in the sale of the product.

The defendants' aim and purpose in the development of the factual side of the case were fully accomplished, as is shown by the Commissioner's Findings of Fact.

2. *On the law side of the case:*

Our basic reliance insofar as the law of the case is involved was upon this proposition: Having established on the factual side of the case that our product is not injurious, but is wholesome and nutritious, our client's business is therefore legitimate and useful, the product and the business are subject to all reasonable regulation, but a statute which absolutely prohibits the conduct of the business is purely arbitrary and violates the due process clause of the Fourteenth Amendment to the Federal Constitution. *Wearer v. Palmer Bros. Co.*, 270 U. S. 402, 46 S. Ct. 320, 70 L. E. 654.

The majority opinion of the Court recognizes the fact that "*Defendant leans heavily upon the decision in Wearer v. Palmer Bros. Co.*" But nowhere in the majority opinion is there any analysis or discussion of *Wearer v. Palmer* which would indicate that the Court had given that case the careful [fol. 717] consideration and analysis which it merits as our main reliance to support the most vital law point in our defense, and after such consideration and analysis had found it to be distinguishable or not applicable here. The majority opinion, after referring to our reliance upon *Wearer v. Palmer Bros. Co.*, simply says: "In our view of the case it will serve no useful purpose to extend this opinion by a discussion of the conflict, or apparent conflict, of authorities. We think the case is governed by the authorities cited in support of the conclusions of law previously stated."

As to the rule applied in *Wearer v. Palmer Bros. Co.*, we respectfully submit that there is no conflict in the decision of the United States Supreme Court.

The gist of the Court's decision, in the instant case, is found in the following quotation from the majority opinion:

"For the purpose of determining the constitutionality of the law in question it is immaterial whether we believe defendant's product when considered as a whole is inferior, equal or superior to whole milk or evaporated whole milk is substantial disagreement in fact exists with respect to the inferiority of the product as compared with whole milk or evaporated whole milk, and the legislature has some basis for believing a filled-milk product is likely to be sold or is susceptible of being sold as and for whole milk or evaporated whole milk with the result that the public may be deceived thereby."

It is thus seen that protection of the public health is not the basis for the decision. The decision is bottomed upon the proposition that however wholesome, nutritious and beneficial to humanity the product may be, it is constitutional to ban it as an outlaw if: (1) substantial disagreement exists with respect to the inferiority of the product as compared with whole milk, and (2) the legislature had some basis for [fol. 718] believing the public might be deceived into buying this product when they believed they were getting whole milk.

We respectfully submit that the position thus taken in the majority opinion in this case is in direct conflict with the rule announced in the Weaver-Palmer case—the authority upon which as this Court says "the defendant leans heavily."

The majority opinion having failed to analyze or distinguish the Weaver-Palmer Bros. case, or even to discuss it, we urge the Court upon rehearing to give careful consideration to the rule there established. While we cited that case repeatedly in our briefs, we did not quote extensively from the Court's opinion. We now quote as follows from the opinion in the Weaver-Palmer case, to demonstrate the similarity of the situations there and now presented:

"Shoddy-filled comfortables made by appellee are useful articles for which there is much demand; and it is a matter of public concern that the production and sale of things necessary or convenient for use should not

be forbidden. They are to be distinguished from things that the state is deemed to have power to suppress as inherently dangerous." (270 U. S. 412-413.)

Compare with the above the Commissioner's findings of fact No. 38 (Ab. 511-512) which demonstrates that defendant's product is a useful article for which there is much demand. The Commissioner's Finding No. 38 reads:

"Defendant's product is used principally by families in the low income group. It is used as a substitute for milk and cream and has no other use. It has had good customer acceptance. The evidence clearly shows that the housewives who have used it prefer it to evaporated whole milk. Among the reasons given for such preference are that it has a better taste than evaporated milk; that it will whip and so can be used as a substitute for [fol. 719] whipping cream; that it is cheaper and that it will keep longer (as heretofore found, hydrogenated cottonseed oil has a greater resistance to rancidity than butterfat), than evaporated whole milk, which is important to families who lack refrigeration facilities."

We further quote from the opinion in *Wearer v. Palmer Bros. Co.* (270 U. S. 414), which concisely states the rule applied in that case on the matter of public health:

"Here it is established that sterilization eliminates the dangers, if any, from the use of shoddy. As against that fact, the provision in question cannot be sustained as a measure to protect health."

Comparing the two cases on the health factor we call attention to the following: As sterilization eliminated the dangers to health that might have inhered in unsterilized shoddy, so fortification of defendant's product with vitamins eliminates the only danger to health that was ever asserted to apply to filled milk. The Commissioner's findings establish this.

It was believed commercially impossible to fortify foods with vitamins A and D until after 1930 (Finding 15, Ab. 499); the vitamin A and D content of Milnot is much superior to that of evaporated milk (Finding 7, Ab. 496) (Finding 19, Ab. 502); all of the water soluble vitamins, such as vitamin C and the B vitamin group, remain in the skim

milk after the cream is removed and hence all are present in Milnot (Ab. 502).

We quote the following further statement from the opinion in *Weaver v. Palmer Bros. Co.*, illustrating the effect of unreasonable and arbitrary classification:

"The fact that the act permits the use of numerous materials, prescribing sterilization if they are second-hand, also serves to show that the prohibition of the [fol. 720] use of shoddy, new or old, even when sterilized, is unreasonable and arbitrary."

So, in the instant case, it is contended by the state (and the contention apparently accepted in the majority opinion) that the Kansas statute authorizes the sale of powdered, or dried, skimmed milk which is fortified with fat or or other than milk fat.

In so far as the Kansas act might have been intended to protect the public health, this authorization of the sale of some skimmed milk fortified with a fat other than butterfat, while at the same time forbidding the sale of defendant's product, renders the statute "*unreasonable and arbitrary*," just as the provision in the statute involved in the *Weaver-Palmer* case which permitted the use of some bedding material after sterilization, but forbade completely the use of any shoddy even after sterilization was held to render the statute "*unreasonable and arbitrary*."

Again, we note that any attempt to sustain the Kansas statute "as a measure to prevent deception" brings about a striking similarity when the case is compared with *Weaver v. Palmer Bros. Co.* On that point the United States Supreme Court calls attention to the fact that under the law of the state it was then considering certain regulations had been provided to prevent deception in the sale of shoddy-filled comfortables, the court's ruling on that point being as follows:

"Nor can such prohibition be sustained as a measure to prevent deception: * * * (The court then described the existing regulations on articles of bedding.) Obviously, these regulations or others that are adequate may be effectively applied to shoddy-filled articles."

The Kansas law provides certain regulations to prevent deception in the sale of foods; penalties for false labels or

[fol. 721] misbranding (Sec. 65-602, G.S. 1935); rules and regulations to be promulgated by state board of health (Sec. 65-603, G.S. 1935); imitation of or offered for sale under the name of any other food (Sec. 65-608, G.S. 1935); and "false, misleading or fraudulent advertising" (Sec. 21-1112, G.S. 1935). With all of these the defendants have scrupulously complied—its present label having been submitted to and approved by the Federal Food and Drug Administration, has as its most conspicuous wording "*Not Evaporated Milk or Cream.*" In each case of defendant's product a notice to dealers is enclosed that—"It is improper to advertise, represent, display or sell either of these products as milk, evaporated milk or cream."

Paraphrasing the language last quoted from the *Weaver Palmer* case, it may be appropriately said here:

"Obviously, these regulations or others that are adequate may be effectively applied to filled-milk."

In the foregoing analysis of the decision of the United States Supreme Court in the case of *Weaver v. Palmer Bros. Company* we have taken some pains to demonstrate the similarity of the situation presented to the Supreme Court of the United States in that case, and the situation before this Court in the instant case. These are:

(a) It was there held, as it should be held in this case, that "it is a matter of public concern that the production and sale of things necessary or convenient for use should not be forbidden. They are to be distinguished from things that the state is deemed to have power to suppress as inherently dangerous."

The rule just stated was held applicable in the *Weaver Palmer* case because "shoddy-filled comfortables . . . are useful articles for which there is much demand."

[fol. 722] So, in the present case Milnot "is used principally by families in the low income group. . . . It has had good customer acceptance . . . housewives who have used it prefer it to evaporated whole milk. . . . it has a better taste than evaporated milk . . . it will whip . . . it is cheaper . . . it will keep longer than evaporated whole milk." (Finding of Fact No. 38, Ab. 514-512.)

We submit therefore that under the Commissioner's finding Milnot, like the shoddy-filled comfortables in the

Weaver-Palmer case, is of such a character that "it is a matter of public concern that the production and sale of things necessary and convenient for use should not be forbidden."

(b) On the question of protecting public health, the United States Supreme Court held in the Weaver-Palmer case:

"Here it is established that sterilization eliminates the dangers, if any, from the use of shoddy. As against that fact, the provision in question cannot be sustained as a measure to protect health."

Paraphrasing the above language to apply to the instant case, it would read:

"Here it is established that fortification with essential vitamins to a greater extent than are found in milk eliminates the dangers, if any, from the use of defendant's product, Milnot. As against that fact, the provision in question cannot be sustained as a measure to protect health."

(c) The United States Supreme Court held that since the statute before it for consideration permitted the use of *some* bedding materials like shoddy, prescribing sterilization for protection of the public if secondhand, that fact served to show that the prohibition of other shoddy, even when sterilized, was unreasonable and arbitrary.

[fol. 723] So, the Kansas statute, if construed to authorize the sale of *some* skimmed milk fortified with fat other than butterfat, but at the same time forbids the sale of defendant's product, that fact alone would serve to show that the legislative permission of the sale in some cases and the prohibition of sale in other cases was unreasonable and arbitrary.

(d) Comparison of the two cases "as a measure to prevent deception" also shows striking similarity.

In the Weaver-Palmer case the Court calls attention to the fact that various regulatory measures were provided by law and that if these were not adequate, other more effective measures of regulation to prevent deception could be applied, but that absolute prohibition was not permissible.

So, in Kansas, various regulatory measures to prevent deception in the sale of products such as that of the defendant have been provided. If these regulations are not adequate, other more effective regulations may be applied, but absolute prohibition is not permissible.

The final conclusion of the United States Supreme Court, after weighing all of these points which establish such a striking parallel with the case now before this Court, is thus stated:

"The constitutional guaranties may not be made to yield to mere convenience. Schlesinger v. Wisconsin, 46 S. Ct. 260, 270 U. S. 230, 70 L. Ed. 557, decided March 1, 1926. The business here involved is legitimate and useful; and, while it is subject to all reasonable regulation, the absolute prohibition of the use of shoddy in the manufacture of comfortables is purely arbitrary and violates the due process clause of the Fourteenth Amendment. Adams v. Tanner, 37 S. Ct. 662, 244 U. S. 590, 306 L. Ed. 1336, L.R.A. 1917F, 1163, Ann. Cas. 1917D 973; Meyer v. Nebraska, 43 S. Ct. 625, 262 U. S. 390, 67 L. Ed. 1042, 29 A.L.R. 1446; Burns Baking Co. v. Bryan, 44 S. Ct. 412, 264 U. S. 504, 68 L. Ed. 813, 32 A.L.R. 661."

[fol. 724] The inquiry naturally arises at this point: Why did this Court, in deciding a case that is so strikingly similar to the Weaver-Palmer case in the elements and principles involved, not adopt and apply the rule which the United States Supreme Court held should be applied in such a case?

The ground of departure in the decision of this Court from the rule applied in the Weaver-Palmer case appears to be the following:

This Court apparently conceives that it is solely a matter of legislative judgment, not subject to review by the courts, whether a legitimate and useful business involving the production and sale of a wholesome, popular and useful article that is specifically found by the Commissioner to be harmless and non-deleterious shall be banned and outlawed, or shall be governed only by reasonable regulations, merely because the legislature may have had some reason to believe that the buying public might be confused or deceived.

into purchasing this product when they intended to purchase another product.

The United States Supreme Court, as already shown, has definitely held to the contrary. The choice between regulation and destruction of a legitimate and useful business is not open to the arbitrary election of the legislature—the health of the public not being endangered—simply because there may exist a difference of opinion as to whether the prescribed article is equal in all respects to the article which seeks to be protected against the competition. The implications of the position this Court has taken are startling. In other fields, as indicated in the dissenting opinion:

“Such power would enable the legislature to ban many common articles of commerce as, for example, syrup not all maple, shoes not all leather, clothes or comfortables with shoddy in them, and the like.”

[fol. 725] Under the rule announced in the instant case the sale of goat's milk could be completely barred by legislative enactment because food experts might differ as to whether it was superior or inferior to cow's milk as an article of diet. That courts are not powerless to protect the rights of a producer but are under a duty to inquire into the reasonableness of legislation of this character is demonstrated not merely by *Weaver & Palmer Bros. Company, supra*, but many other cases.

We quote as follows from the opinion in the case of *Burns Baking Co. v. Byran*, 264 U. S. 504, 44 S. Ct. 412, 68 L. Ed. 813:

“But a state may not, under the guise of protecting the public, arbitrarily interfere with private business or prohibit lawful occupations or impose unreasonable and unnecessary restrictions upon them. *Lawton v. Steele*, 152 U. S. 133, 137, 14 Sup. Ct. 499, 38 L. Ed. 385; *Meyer v. Nebraska*, 262 U. S. 390, 399, 43 Sup. Ct. 625, 67 L. Ed. 1042. Constitutional protection having been invoked, it is the duty of the court to determine whether the challenged provision has reasonable relation to the protection of purchasers of bread against fraud by short weights and really tends to accomplish the purpose for which it was enacted.” (I.e. 264 U. S. 513.)

"The uncontradicted evidence shows that there is a strong demand by consumers for unwrapped bread. It is a wholesome article of food, and plaintiffs in error and other bakers have a right to furnish it to their customers. The lessening of weight of bread by evaporation during 24 hours after baking does not reduce its food value. *It would be unreasonable to prevent unwrapped bread being furnished to those who want it in order technically to comply with a weight regulation and to keep within limits of tolerance so narrow as to require that ordinary evaporation be retarded by wrapping or other artificial means.*" (I.e. 264 U. S. 516.)

[fol. 726]. *United States v. Carolene Products Co.*, 304 U. S. 144, 58 S. Ct. 778, 82 L. Ed. 1234, when carefully analyzed, is not in conflict with *Heaver v. Palmer Bros. Co.*, *supra*. *United States v. Carolene* came before the Court on a demurrer to an indictment which had charged the defendant with the sale of "an adulterated article of food injurious to the public health." The allegations of the indictment were admitted by the demurrer. There being no evidence, the Court found the statute not to be unconstitutional upon its face.

It should be noted that, although the Federal Act was held constitutional in *U. S. v. Carolene*, *supra*, that result followed only because the defendants there admitted, by their demurrer, that the product was injurious to public health and a fraud upon the public, and thereby left for decision only the question whether or not Congress had power to prohibit the shipment in interstate commerce of such an article of food. The question now presented is an entirely different one, affected in no way by the earlier decision.

As said by the Supreme Court of the United States in *Quong Wing v. Kirkendall*, 223 U. S. 64, 32 S. Ct. 193, 56 L. Ed. 350:

"Laws frequently are enforced which the court recognizes as possibly or probably invalid if attacked by a different interest or in a different way."

In the present case there is no demurrer which challenges the constitutionality of the Kansas statute on its face. The validity of the statute is here attacked in an entirely different way. There is here a record which does

not by a demurrer admit that the defendant is selling "an adulterated article of food injurious to the public health," but on the contrary a record which shows the product not to be harmful or injurious and shows that any contention [fol. 727] that its sale is a fraud upon the public is without substantial foundation. If, in *United States v. Carolene Products Co.*, *supra*, instead of demurring to the indictment and thus admitting all its allegations the defendant had gone to trial on the facts, the situation in that case would have been similar to that in the present case, and the rule applied in the Weaver-Palmer case would have applied.

Thus in the main opinion in *United States v. Carolene Products Co.*, Mr. Justice Stone said (p. 153):

"Where the existence of a rational basis for legislation whose constitutionality is attacked depends upon facts beyond the sphere of judicial notice, such facts may properly be made the subject of judicial inquiry, *Borden's Farm Products Co. v. Baldwin*, 292 U. S. 1943, and the constitutionality of a statute predicated upon the existence of a particular state of facts may be challenged by showing to the court that those facts have ceased to exist."

To the same effect is the following quotation from Mr. Justice Butler's concurring opinion in the same case:

"*Prima facie* the facts alleged in the indictment are sufficient to constitute a violation of the statute. But they are not sufficient conclusively to establish guilt of the accused. At the trial it may introduce evidence to show that the declaration of the act that the described product is injurious to public health and that the sale of it is a fraud upon the public are without any substantial foundation."

By the Commissioner in his report and by this Court in the majority opinion, reliance is placed upon the earliest of the oleomargarine cases, *Powell v. Pennsylvania*, 127 U. S. 678, 8 Sup. Ct. 1257, 32 L. Ed. 253 (decided in 1888). [fol. 728] But the doctrine announced in *Powell v. Pennsylvania* was completely rejected by the United States Supreme Court ten years later in deciding *Schollenberger v. Pennsylvania*, 171 U. S. 1, 18 S. Ct. 757, 43 L. Ed. 49.

The opinion in the Schollenberger case had the beneficent effect of rescuing for the lower income people of the nation who cannot afford butter, the right to enjoy oleomargarine as a useful and healthful substitute.

Every argument advanced by the state in the instant case was advanced by the state in the Schollenberger case, but the United States Supreme Court there held:

"2. The fact that inspection or analysis of the article imported is somewhat difficult and burdensome will not justify a state in totally excluding a pure and healthful food product.

"3. A state cannot absolutely prohibit the introduction within its borders of an article of commerce which is not adulterated, and which in its pure state is healthful, simply because such article in the course of its manufacture may be adulterated by dishonest manufacturers, for the purpose of fraud or illegal gains."

In the course of the same opinion it was further pointedly stated:

"The bad article may be prohibited, but not the pure and healthful one."

It is to be recalled that in the Commissioner's report as adopted and approved in the majority opinion, the defendant's product is found to be wholesome and nutritious; and non-deleterious, and fairly and honestly labeled, but its sale is absolutely prohibited merely because it is held not to be a complete food in itself as the sole diet of infants, without some supplementation, and because it is susceptible of and has been sold—never by the defendant, but in a few instances by local merchants contrary to the specific instructions of the defendant—for whole condensed milk.

And the decision rests upon these very narrow grounds, notwithstanding the Commissioner's finding that:

"Milk is not a perfect food for human beings. It is deficient in iron, copper and manganese, and in Vitamin D. . . . Pediatricists do not advise its use, however, as the sole diet of infants without modification or addition of other substances." (Finding 20, Ab. 502-503.)

III

The third ground for asking for a rehearing has to do with the economic question. We respectfully submit that the Court misconceived our position on this question. The rule we contend for is not that in times of food shortages the public health should be endangered by the marketing of articles of food that are detrimental to public health. Our contention is that, even under normal economic conditions when food as well as other articles of convenience are plentiful, the right of the mass of the public to purchase and enjoy articles for which there is a popular demand and which are useful and non-deleterious outweighs any supposed right to absolutely prohibit their sale because of the possibility or even the probability that occasionally a member of the public may be deceived or misled in buying such an article when he believed he was buying a similar article.

In times of great economic stress when there is a lack of adequate food supply to meet not only the desires but the actual needs of the public the rule which makes it "a matter of public concern that the production and sale of things necessary or convenient for use should not be forbidden" takes on such added force that it becomes a rule of necessity rather than a mere rule of propriety.

[Vol. 730] The rule referred to which renders unconstitutional a *legislative prohibition* of the sale of useful articles which are non-deleterious does not have as its major purpose the furtherance of the interest of the producer in marketing his goods. Its major purpose is to protect the right of the public to satisfy its desires by purchasing useful and convenient things in the most economical manner possible.

The application of this principle, even during a period of normal economic conditions, is forcefully and authoritatively stated and applied by the United States Supreme Court in *Weaver v. Palmer Bros. Co.* to which we have heretofore referred at some length. On this point the Court in that case said:

"It is a matter of public concern that the production and sale of things necessary or convenient for use should not be forbidden." (270 U. S. 412.)

"The business here involved is legitimate and useful; and, while it is subject to all reasonable regulations, the

absolute prohibition of the use of shoddy in the manufacture of comfortables is purely arbitrary and violates the due process clause of the Fourteenth Amendment." (270 U. S., l.e. 415.)

So also in *Burns Baking Co. v. Byran, supra*, the United States Supreme Court said:

"The uncontradicted evidence shows that there is a strong demand by consumers for unwrapped bread. It is a wholesome article of food, and plaintiffs in error and other bakers have a right to furnish it to their customers."

The foregoing declarations of the public's concern in the production and sale of things necessary and convenient for use were made in the hey-day of our economic prosperity. They related to articles of household use that were manufactured out of secondhand cloth in which there naturally inhered some sanitary danger to public health, and to unwrapped bread, for which there was a public demand. There were available then plenty of comfortables made entirely of new whole materials, the superiority of which over shoddy filled comfortables was hardly debatable. Yet the Court recognized the fact that by reason of the public concern in the right to purchase a useful article at reduced cost, reasonable regulations to secure sanitary protection and reasonable regulations to protect against the possibility of occasional deception marked the limit of legislative authority. Absolute prohibition of the sale of such articles goes beyond constitutional limitations.

So it would appear that, even at a time when economic conditions in this country were stable and normal, the defendant's product being not merely economical but being also a "useful article for which there is much public demand" and being "necessary and convenient for use," economic considerations alone made "it a matter of public concern that the production and sale . . . should not be forbidden."

This means nothing less than that even in normal times economic considerations calling for protection of the public in its right to buy useful things for which there is a popular demand would outweigh any supposed right to deprive the public of such articles upon fanciful and out-

moded notions that existed in the field of science twenty years ago.

Let us see with what compelling necessity the economic situation existing in this country at the present time calls for enforcement of the rule that "it is a matter of public concern that the production and sale of" a wholesome, useful and popular article that aids in relieving not only the milk shortage but the butter shortage "should not be forbidden."

That economic considerations in the sense that that term is used to denote the furtherance of the interests of [Vol. 732] the general public at the time a legislative enactment comes before the Court should be given weight in determining the constitutionality of a statute, is a matter to be given serious consideration by the courts has been frequently recognized and applied.

In *Abie State Bank v. Weaver*, *supra*, a Nebraska bank guaranty statute which had been held valid in 1910 (*Schollenberger v. First State Bank*, 219 U. S. 114), was held invalid under conditions existing in 1931. In *Chastleton Corporation v. Sinclair*, 264 U. S. 543, 44 Sup. Ct. 405, 68 L. Ed. 841, a rent control act that had been held valid in 1919 (*Block v. Hirsh*, 256 U. S. 135) was held invalid in 1924. In *Newton v. Consol. Gas Co.*, 258 U. S. 165, 42 Sup. Ct. 264, 66 L. Ed. 538, a statutory rate which had been sustained for earlier years (*Willcox v. Consol. Gas Co.*, 212 U. S. 19, 29 Sup. Ct. 192), was held confiscatory for 1918 and 1919. In *Nashville, C. & St. L. Ry. Co. v. Walters*, 294 U. S. 405, 55 Sup. Ct. 486, 79 L. Ed. 949, the Supreme Court speaking through Mr. Justice Brandeis, held that a changed condition in traffic due to the development of the automobile was a matter to be taken into consideration by the Court in determining the validity of a statute imposing a part of the cost of grade separation crossings upon a railroad company.

The record in this case brings out the serious shortage both of butter and milk that confronts the nation. The Court, however, will, in addition to the facts in the record, undoubtedly take judicial notice of such facts as are matters of common knowledge.

In the *Topeka State Journal* of Tuesday, October 12th, the following news item appeared:

Washington Roundup

Big City Areas Feel Pinch of a Milk Shortage

Washington, Oct. 12 (AP)—With a discouraging milk production outlook to give it impetus, the War Food Administration delivery curtailment program was headed Tuesday toward the so far unaffected metropolitan areas. About 30 places have felt the pinch of delivery and sales quotas but latest surveys show a need for further limitations. Plans call for holding of milk consumption to June levels and consumption of milk products to 75 per cent of June levels.

There also appears in the same issue of *The Topeka State Journal* (Oct. 12, 1943) the following news story which graphically pictures the startling shortage of butter now existing and the attempts to release its competitor—margarine—from the stifling taxes that have been imposed on that article by the pressure groups as trade barriers after their efforts at complete prohibition of its sale had been frustrated by the United States Supreme Court in *Scholar v. Pennsylvania*, 270 U. S. 1, to which we have heretofore referred:

[fol. 734]

Equal Tax Break for Margarine a Seething Issue

**Removal of Levies
Demanded by Makers
in War Emergency**

By James Marlow and
George Zielke

Washington, Oct. 12 (AP)—The greatest long-distance food fight in this country—margarine versus butter—now goes into another sharp round with all sections of the country concerned in the outcome.

The battle comes at a time when butter, scarce, is rationed at 16 points a pound and margarine, rationed at 4 points, costs more than it would if there were no federal tax on it.

The margarine-makers, for 57 years seeking equal terms with the butter-makers, will try once more to shake off that federal tax imposed on them as far back as 1886.

The house agriculture committee is to begin hearings October 26 on the bill introduced last April by Representative Fulmer (D., S. C.) to remove the government taxes on domestic margarine.

All the committee members are not likely to see eye to eye on the

[fol. 735]

measure. Some represent dairy farmers. Some represent soybean

and cotton growers. Oil from soybeans and cottonseed is used in margarine. So is peanut oil.

The National Association of Margarine Manufacturers—some of the largest meat-packers are members—say that because of various taxes only one-third of the nation's retail grocers can afford to handle margarine.

The association will be in there slugging.

At the National Co-operative Milk Producers Association, representing dairymen, it was said that organization would oppose the bill.

Champions of margarine admit that when early legislation was first enacted considerable quantities of margarine were sold as butter. Any margarine sold that way, of course, is fraudulent.

But they say that now margarine, fortified with vitamins, is as good as butter. Those are fighting words to butter-makers.

Production of margarine has climbed in the war years, is now up in the hundreds of millions of pounds. It's still a dwarf compared with butter.

The Milk Producers association says butter production in 1942 was over 2 billion pounds, in the first seven months of 1943 ran parallel to 1942, and will have shown a 10 per cent drop in September for various reasons.

Margarine makers, ready for the fight ahead, note:

[fol. 736]

In addition to the federal law all states—except Alabama, Arizona, New Mexico and Oklahoma—have

additional taxes or restrictive laws of one kind or another on margarine.

Margarine was first produced in France in the 1870s; was made here shortly afterwards. Before passage of the federal tax in 1886, 17 states had enacted laws regulating margarine production and seven had laws prohibiting it altogether.

The Fulmer bill, altho advocating removal of federal taxes on the domestic margarine, would strongly tax the imported variety.

Here are the federal taxes on margarine:

Ten cents a pound on the yellow-colored kind; $\frac{1}{4}$ -cent a pound on the uncolored; manufacturers, \$600 a year; wholesalers of colored, \$480; wholesalers of uncolored, \$200; retailers of colored, \$48; retailers of uncolored, \$6.

In protest, the margarine manufacturers say a restaurant or boarding house which now serves margarine and colors it is classed as a manufacturer and must pay the annual tax of \$600 in addition to the per pound tax of 10 cents.

The various state laws range from imposing license fees on the manufacture, distribution, sale or serving of margarine to those prohibiting its use in state institutions.

[fol. 737] The defendant's two plants in the period from 1938 to 1941, inclusive, purchased annually from 89,994,885 to 136,889,434 pounds of milk (Ex. 79). From the milk so purchased, the butterfat was manufactured into butter. The skimmed milk remaining after the butterfat had been extracted was used in producing Milnot of which the defendant produced something over one million one hundred thousand cases in the year 1940, and the production has in-

increased in subsequent years. (Ab. 78.) The defendant thus rescued for use by the public for food this very substantial amount of skimmed milk, and the Commissioner found that skimmed milk is a wholesome and nutritious food—almost fifty billion pounds of skimmed milk is fed to animals or destroyed every year—and the authorities generally agree that skimmed milk contains from one-half to two-thirds of the caloric value of milk and that it is desirable that more skimmed milk be used in the human dietary. (Finding 13, Ab. 497-498.)

If the defendant is compelled to cease the making of its product, it will have to choose between two courses: (1) continue to make butter, but waste or sell for other than food purposes the enormous quantities of skimmed milk remaining after the butterfat has been extracted, or (2) cease making butter and convert its plant into a condensed whole milk plant.

We mention these things not with the idea that the loss to the defendant is of controlling consideration in this connection, but because the loss thereby incurred in supplying the public's food needs would be a substantial loss.

If the first plan is followed, the milk shortage is made more acute by loss of the useful product now made from the skimmed milk.

If the second alternative is adopted, then the butter shortage is made more acute by withdrawing these plants from the manufacture of butter.

[fol. 738] As the defendant is now operating, it is contributing substantially to relieve both the butter shortage and the milk shortage. Everyone in the United States is very definitely aware of the increasing severity of the rationing of the over-taxed food production. Butter has as high a point value as any article of food and the shortage of both milk and butter is daily becoming more acute.

With the nation facing such conditions in its food supply, the necessity for rescuing for consumption as human food the millions of pounds of skimmed milk now wasted is a matter of vital public concern. The defendant's product contributes to that desirable result, with no hazard to the public health. The millions of dollars being spent by our government to find substitutes for pure rubber are being wisely spent, though synthetic rubber may lack some of the good qualities of natural rubber. If a statute had been en-

acted in 1923 forbidding the production and sale of synthetic rubber, the courts would today without hesitation strike down such an enactment in the light of present-day scientific progress and also in the light of present economic conditions.

The State urged the economic considerations purely upon a trade barrier basis—to protect the producer of milk, particularly the powerful organization of condensed milk producers, against a competing product. That such was the ground covered by the testimony which the State offered on the economic questions is made plain by the testimony of the witness, Tiedeman (Ab. 464-468). To further such interest the Evaporated Milk Association (now under prosecution for alleged violation of the Federal anti-trust laws), had its attorney and its technical expert attend every hearing held by the Commissioner for the reception of evidence in this case. These men advised with the attorneys appearing for the State and gave aid in the examination of witnesses. (Ab. 393-394.)

[fol. 739] *The defendants urge the economic question upon the Court, not for the protection of private interests, but as heretofore indicated, because "It is a matter of public concern that the production and sale of things necessary and convenient for use should not be forbidden."* (270 U. S. 412.)

Conclusion

In conclusion we respectfully submit:

1. A rehearing should be granted because Judge Parker's connection with the prosecution of the case as a member of the executive department of the state should have disqualified him to judge his own case as a member of the judiciary department of the State. In this connection we call attention to the news reports from Washington published in the press as this motion is being written, reporting the action taken by the United States Supreme Court in two important cases where four of the nine judges disqualified themselves. (See page 4 of *Topeka Daily Capital*, issue of October 19th, 1943):

The court also ruled formally that all further proceedings in two cases—the Government's antitrust suit, against the Aluminum Company of

America and a test of the death sentence provision of the Utility Holding Company Act involving the North American Company—will be deferred until a quorum of six qualified justices is obtained. Four of the nine justices have disqualified themselves in each case.

2. The majority opinion is in direct conflict with the [fol. 740] authoritative and controlling decisions of the United States Supreme Court, particularly *Weaver v. Palmer Bros. Co.*, upon this proposition: that while a business that is legitimate and useful "is subject to all reasonable regulations, the absolute prohibition of" conducting such a business "is purely arbitrary and violates the due process and equal protection clause of the Fourteenth Amendment."

3. Upon the economic grounds we have discussed, the constitutional right of the mass of the public to purchase and enjoy articles for which there is a popular demand and which are useful and non-deleterious outweighs any supposed right to absolutely prohibit their sale because of the possibility or even the probability that occasionally a member of the public might be deceived or misled into buying an article when he believed he was buying a similar article.

Upon the second and third grounds just mentioned, we urge that all members of the Court study with particular care the dissenting opinion written by Judge Wedell in this case. The reasoning there set forth is in our opinion a most convincing and unanswerable argument in favor of the entry of a judgment in favor of the defendants in this case.

Respectfully submitted, Tiukham Veale, Topeka, Kansas, Attorney for Defendant, The Sage Stores Company; T. M. Lillard, Topeka, Kansas, Attorney for Defendant, Carolene Products Company.

Lillard, Eidson, Lewis & Porter, Topeka, Kansas, Of Counsel for Defendant, Carolene Products Company.

[fol. 743] IN THE SUPREME COURT OF THE STATE OF KANSAS

No. 35,143

THE STATE OF KANSAS EX REL A. B. MITCHELL (substituted),
AS ATTORNEY GENERAL, *Plaintiff*,

VS.

THE SAGE STORES COMPANY, a corporation, and CAROLINE
PRODUCTS COMPANY, a corporation, *Defendants*

SUPPLEMENT TO MOTION FOR A REHEARING Filed October
27, 1943

As a supplement to their motion for a rehearing, defendants allege that the reference on page 10 of their motion for a rehearing to "the historical and constitutional right (of a litigant) to have his case decided by a thoroughly impartial and disinterested tribunal" is based specifically upon the point that the participation of Justice Parker in the decision of this case in view of his having brought the suit as Attorney General of the State of Kansas as the relator plaintiff constitutes a denial of due process of law to these defendants in violation of the Fourteenth Amendment to the Constitution of the United States.

In support of this point defendants cite the following authorities:

[fol. 744] In Volume 2 of Cooley's Constitutional Limitations (Eighth Edition) that distinguished author says on page 870 *et seq.*:

"There is also a maxim of law regarding judicial action which may have an important bearing upon the constitutional validity of judgments in some cases. No one ought to be a judge in his own cause; and so inflexible and so manifestly just is this rule, that Lord Coke has laid it down that 'even an act of Parliament made against natural equity, as to make a man a judge in his own case, is void in itself; for *jura naturae sunt immutabilia*, and they are *leges legum*.'

"This maxim applies in all cases where judicial functions are to be exercised, and excludes all who are interested, however remotely, from taking part in their exercise. It is not left to the discretion of a judge; or

to his sense of decency, to decide whether he shall act or not; all his powers are subject to this absolute limitation; and when his own rights are in question, he has no authority to determine the cause. Nor is it essential that the judge be a party named in the record; if the suit is brought or defended in his interest, or if he is a corporator in a corporation which is a party, or which will be benefited or damaged by the judgment, he is equally excluded as if he were the party named. Accordingly, where the Lord Chancellor, who was a shareholder in a company in whose favor the Vice-Chancellor had rendered a decree, affirmed this decree, the House of Lords reversed the decree on this ground, Lord Campbell observing: "It is of the last importance that the maxim that 'no man is to be a judge in his own case' should be held sacred. And that is not to be confined to a cause in which he is a party, but applies to a cause in which he has an interest." We have again and again set aside proceedings in inferior tribunals because an individual who had an interest in a cause took part in the decision. And it will have a most salutary effect on these tribunals, when it is known that this high court of last resort, in a case in which the Lord Chancellor of England had an interest, considered that [fol. 745] his decree was on that account a decree not according to law and was set aside. This will be a lesson to all inferior tribunals to take care, not only that in their decrees they are not influenced by their personal interest, but to avoid the appearance of laboring under such an influence.

"It is a matter of some interest to know whether the legislatures of the American States can set aside this maxim of the common law, and by express enactment permit one to act judicially when interested in the controversy. The maxim itself, it is said, in some cases, does not apply where, from necessity, the judge must proceed in the case, there being no other tribunal authorized to act; but we prefer the opinion of Chancellor Sandford of New York, that in such a case it belongs to the power which created such a court to provide another in which this judge may be a party; and whether another tribunal is established or not, he at least is not intrusted with authority to determine his own rights, or his own wrongs."

On page 873 of the same volume, Judge Cooley further says:

“But except in cases resting upon such reasons, we do not see how the legislature can have any power to abolish a maxim which is among the fundamentals of judicial authority. The people of the State, when framing their constitution, may possibly establish so great an anomaly, if they see fit; but if the legislature is intrusted with apportioning and providing for the exercise of the judicial power, we cannot understand it to be authorized, in the execution of this trust, to do that which has never been recognized as being within the province of the judicial authority. To empower one party to a controversy to decide it for himself is not within the legislative authority, because it is not the establishment of any rule of action or decision, but is a placing of the other party, so far as that controversy [fol. 746] is concerned, out of the protection of the law, and submitting him to the control of one whose interest it will be to decide arbitrarily and unjustly.”

Similar views on this principle were expressed with equal clarity and force by the late Chief Justice Johnston, speaking for this Court in *Tootle v. Berkley*, 60 Kan. 446. After citing the Kansas statutes which specifically disqualify district judges, Justice Johnston stated that the disqualification should arise even in the absence of any statute, and that a judge should be disqualified “in his own case” as well as in one where he had some pecuniary interest. We quote as follows from Justice Johnston’s opinion:

“If the statute were silent on the subject the judge would nevertheless be disqualified to act. It is a rule of the common law and a principle of natural justice that *no man shall be judge in his own case* or in one in which he may have a pecuniary interest. It has been said that ‘the learned wisdom of enlightened nations and the unlettered ideas of ruder societies are in full accordance upon this point.’ (*Insurance Co. v. Price*, 1 Hopk. Ch. 1.) The principle of law which incapacitates a person from being judge in his own cause is extended so as to disqualify a judge who may have been of counsel for one of the parties in the case. It is the purpose

of the law that no judge shall hear and determine a case in which he is not wholly free, disinterested, impartial, and independent. *'Next in importance to the duty of rendering a righteous judgment is that of doing it in such a manner as will beget no suspicion of the fairness or integrity of the judge.'* (12 A. & E. Encycl. of L. 40.)"

Under the provisions of the Kansas Constitution and statutes, as we have heretofore indicated, in the prosecution of suits of the character of the instant case, the attorney general serves in a much higher function than as a mere attorney. The State of Kansas is, in such cases, personified in the individual who, by the votes of the electors of his state, holds the office of attorney general. We do not believe the reports in any Anglo-Saxon commonwealth contain a record of any other instance where the plaintiff in such a case has sat as a member of the Court and has cast the deciding vote against his adversary.

That a statute which would authorize or permit such a procedure is not only contrary to natural justice but that it would also amount to a denial of due process of law in violation of the Fourteenth Amendment to the Federal Constitution seems obvious.

The rule is thus stated in 30 Am. Jur., p. 767:

"Next in importance to the duty of rendering a righteous judgment is that of doing it in such a manner as will beget no suspicion of the fairness and integrity of the judge. It has been pointed out elsewhere that due process of law requires a hearing before an impartial and disinterested tribunal. Every litigant, including the state, in criminal cases, is entitled to nothing less than the cold neutrality of an impartial judge, and the law intends that no judge shall preside in a case in which he is not wholly free, disinterested, impartial, and independent."

The constitutional right of a litigant to have his case determined by a tribunal that is so constituted that it shall be free from any suspicion of interest or prejudice has been applied by the United States Supreme Court in many cases.

A notable instance is the oft cited opinion of Mr. Chief Justice Taft in *Tumey v. Ohio*, 273 U.S. 510, 71 L. Ed. 749.

47 S. Ct. 437, 50 A.L.R. 4243 where it was held that due process of law was denied by the State of Ohio under a statute which authorized trial of misdemeanors before a [fol. 748-752] magistrate who participated in the fines imposed upon the accused.

Other notable instances where constitutional rights are held to be invaded through failures of a state to provide a judicial tribunal so constituted as to be above any suspicion of partiality are found in cases where accused negroes were indicted and convicted under circumstances which showed that there had been an exclusion of members of the negro race from the grand jury or the petit jury.

The most notable of these cases is the famous "Scottsboro" case, *Morris v. State of Alabama*, 294 U.S. 587, 55 S. Ct. 579, 79 L. Ed. 1074. See also *Smith v. Texas*, 311 U.S. 128, 61 S. Ct. 164, 83 L. Ed. 84; and *Hill v. Texas*, 316 U.S. 400, 62 S. Ct. 1159.

The fact that the disqualification of some of the judges on a court to participate in the decision of a particular case prevents the Court from entering a judgment in that case affords no ground for disregarding the fundamental principles we have been discussing is well illustrated by the recent action of the Supreme Court of the United States, when such a situation confronted it, in deferring all further proceedings in two cases of national importance.

Respectfully submitted, Tinkham Veale, Topeka, Kansas, *Attorney for Defendant, The Sage Stars Company*; T. M. Lillard, Topeka, Kansas, *Attorney for Defendant, Carolene Products Company*.

Lillard, Eidson, Lewis & Porter, Topeka, Kansas, *Of Counsel for Defendant, Carolene Products Company*.

[fol. 753] IN THE SUPREME COURT OF THE STATE OF KANSAS

No. 35,143

THE STATE OF KANSAS, ex Rel. A. B. MITCHELL (Substituted), as Attorney-General, Plaintiff,

vs.

THE SAGE STORES COMPANY, a Corporation, and CAROLENE PRODUCTS COMPANY, a Corporation, Defendants

OBJECTIONS OF PLAINTIFF TO DEFENDANTS' MOTION FOR REHEARING

Comes now the plaintiff and objects to the granting of defendants' motion for rehearing for the reasons hereinafter stated.

Defendants set up as grounds for a rehearing that Justice Parker was Attorney General at the time this suit was instituted, and was Attorney General during the time that testimony was taken, and up until after the Commissioner made his report to the court in said cause; that said facts disqualify him, and deny to defendants due process of law. Defendants also set up other grounds in their motion for rehearing, which will be discussed under a second division of these objections.

[fol. 754]

I

Justice Parker is not disqualified from sitting in judgment in this cause for the reasons:

A. Defendants have waived, and are now estopped, from asserting any disqualification of Justice Parker, because no objection was made at the time said cause was orally argued and submitted to the court, Justice Parker then sitting at the hearing and the submission of said cause. (See 30 American Jurisprudence, Page 799, Sections 94 and 95.)

B. Under the facts, Justice Parker did not personally participate in any of the proceedings in this case, or the prior case determined by this court, either in connection with the pleadings, the taking of testimony, the briefing of the case, or consultations in connection therewith, and, therefore, there is no basis for any finding of bias or prejudice because of knowledge of the merits of the cause, or

having an opinion respecting the subject matter. (See *Barber County Commissioners v. Lake State Bank*, 123 Kan. 10; *Actna Insurance Co. v. Travis*, 124 Kan. 350; 30 American Jurisprudence 783, Sections 74 to 83.)

C. Justice Parker, under the facts, had no private, personal interest, either as a party or attorney for a party, in the result of the judgment, either directly or immediately, [fol. 755] or any pecuniary interest therein. (See the *Travis* and *Lake State Bank* cases; 30 American Jurisprudence 771, Sections 56 to 67.)

D. Even though otherwise disqualified, there being no other tribunal or method of determining the issue involved, the doctrine of necessity requires Justice Parker to exercise the duties of his office, and sit in said cause. (See *Barber County Commissioners v. Lake State Bank*, and *Actna Insurance Co. v. Travis*, supra; 30 American Jurisprudence 770, Section 55.)

E. Under the facts in this case Justice Parker is not disqualified from sitting. It is his duty to sit regardless of personal embarrassment, feelings of delicacy, or other considerations not amounting to legal disqualifications. (See 30 American Jurisprudence 798, Section 93; *Barber County Commissioners v. Lake State Bank*, and *Actna Insurance Co. v. Travis*, supra; *Erans v. Gore*, 253 U. S. 245.)

The law in this state, respecting the right of Justice Parker to sit, based both upon disqualification and denial of due process of law, has heretofore been determined, and is settled in this state by the cases of *Barber County Commissioners v. Lake State Bank*, 123 Kan. 10, and *Actna Insurance Co. v. Travis*, 124 Kan. 350, from which latter [fol. 756] case a writ of certiorari was denied by the supreme court of the United States in *Actna Insurance Co. v. Travis*, 276 U. S. 628.

In support of the above stated propositions, A to E, it is well to note the facts and decisions applicable to the situation now before this court. Defendants contend that the *Lake State Bank* case and the *Travis* case are not controlling, the first for the reason that the action was commenced after the Attorney General was no longer Attorney General, even though he had defended those cases rather than being the plaintiff; that in instituting the present

action Parker, as Attorney General, had to determine what the public interest required. It will be noted that although the Attorney General is the chief law enforcing officer of the state, the statutes of this state do not require that he act as a complainant in the enforcement of the criminal laws of the state, except in liquor and gambling matters. The general enforcement of the filled milk act is enjoined upon the Dairy Commissioner of the State of Kansas. Under the facts as shown by the affidavits attached to this motion the only thing Parker was called upon to do was to determine whether or not it would be to the advantage of all parties concerned to determine the question involved by [fol. 757] the bringing of a quo warranto action, or whether said matter should be left to being determined by the institution of criminal procedure. In determining this question he performed the duty of his office enjoined upon him by law, but which did not require his determination of the merits of the controversy either as to fact or law. In so determining he determined a question of public interest, but he was only performing a duty of his office the same as many other duties enjoined upon him. He was not determining a matter that was personal to him, or that could result in causing him to be biased or prejudiced one way or the other in said case, or that would result in any pecuniary benefit, nor would the outcome of the judgment in any way affect any private or personal or pecuniary interest of J. S. Parker at that time, or at the time said cause was submitted to the court when he was sitting as one of the justices of said court.

It is the common knowledge of this Court, of which the Court may take judicial notice, that many administrative departments of the State have questions arise as to the interpretation of statutes wherein it is advisable to determine the law with regard to the duties of such administrative agencies, and in such cases the Attorney General is requested to bring mandamus or quo warranto proceedings [fol. 758] for the purpose of determining the law applicable to the duties of such offices.

It is also well known to this Court that the Attorney General does not personally have time to attend to the pleadings and the taking of testimony, and preparation of briefs in all the cases in his office, and that such work is delegated either to the regular assistants, or special assistants

in whose integrity and ability the Attorney General reposes his confidence in the handling of such matter.

In the case of *Barber County Commissioners v. Lake State Bank*, supra, while Richard J. Hopkins was Attorney General, a suit was instituted in the Supreme Court of Kansas to obtain certificates against the guaranty fund, and the Bank Commissioner was defended by the Attorney General through two assistants of the Attorney General's office. In connection with that lawsuit Hopkins, as Attorney General, wrote certain letters pertaining to the case, but gave no personal attention to the preparation or trial thereof. After he had become Attorney General another suit was instituted relating to the same subject matter, and objection was made to his sitting as a justice in determination of the second matter involving the same issues, which were defended by him while he was Attorney General [fol. 759] through said assistants. This Court said on page 12:

"Whether or not he gave the matter his personal attention is immaterial, inasmuch as all of the acts of the office of attorney-general during his term were performed in his name and he is responsible therefor."

Again on page 13 this Court stated:

"Justices of the supreme court are selected from the lawyers of the state who have had experience in the practice of their profession. The busy lawyer in Kansas, in the course of ten or twenty years, will have examined many legal questions, given advice in which they were involved, and will have been employed as counsel in a number of cases which depended for their correct solution on the application of legal principles. Acting in such matters cannot disqualify a justice of the supreme court when the same questions or issues come before that court for review; rather, it is the knowledge and experience a lawyer gains by examination of such matters that qualifies him to perform the duties of a justice of the supreme court.

"The court takes judicial notice of the fact that the attorney-general's office is a busy place and uses a number of lawyers, all of whom are constantly at work

on legal questions that arise on matters of public concern in the state. If an attorney-general, afterward elected to the supreme court, is disqualified to sit in a case in which some legal question involved was passed on by him or his office as attorney-general, there will [fol. 760] not be many cases before the supreme court in which he can take part, because a large part of the entire field of law will have been under examination and discussion at some time during his two consecutive terms of office as attorney-general.

"Richard J. Hopkins in the case against the bank commissioner did what the law commanded him to do as attorney-general; he defended the bank guaranty fund from a claim against it which the court held to be invalid. He was not paid to advance the cause of a private litigant. He was paid a salary to perform a public duty. When that duty had been performed and his term of office had expired, his whole connection with the matter ended."

and on page 14 this Court stated:

"It should be noted that neither the constitution nor the statutes of this state prescribe any disqualification for a justice of the supreme court, although the statutes do for judges of the district courts. (R. S. Secs. 20-305, 77-201, subdiv. 28.) The constitution of this state says:

"The supreme court shall consist of seven justices." (Const. art. 3, sec. 2.)

"Why seven justices? Why not six or eight justices? To prevent an equal division on the court. A majority is required by the constitution. The constitution, the statutes, and the public policy of the state contemplate that all of the justices of the supreme court, when not sitting in divisions, shall act in all cases before it. Neither the constitution, nor the statutes, nor the public [fol. 761] policy of this state, contemplates that any justice of the supreme court shall be disqualified to act on account of the conditions that exist in the present action if his judgment is necessary in order to reach a conclusion.

"In *Philadelphia v. Fox*, 64 Pa. St. 169, 185, the court said:

"The true rule unquestionably is that wherever it becomes necessary for a judge to sit, even where he has an interest—where no provision is made for calling another in, or where no one else can take his place—it is his duty to hear and decide, however disagreeable it may be."

"To the same effect is *Galcy v. Board, etc.*, 174 Ind. 181; *Matter of Ryers et al.*, 72 N. Y. 1, 10-15; *State, ex rel. Null, v. Polley*, 34 S. D. 565; *McCon v. Handlin*, *State Auditor*, 35 S. D. 487; *Stafford v. County Court*, 58 W. Va. 88, 93; *State, ex rel. Cook, v. Houser*, 122 Wis., 534, 573.

"Justice Hopkins is not disqualified to act as a member of the court in this case. He might, with propriety, decline to sit, until it becomes necessary for him to act in order that the court may reach a conclusion. Under the circumstances that now exist, it is necessary for him to take his share of the burden that is on the court."

It will be noted that the Court, in the above case, recognized that neither the constitution nor the statutes nor the public policy of the State contemplates that a justice be disqualified on account of such conditions existing, that is, [fol. 762] of having had knowledge regarding the merits of the case, if the judgment of such justice is necessary in order to reach a conclusion, and that participating as Attorney General in the manner in which he did does not constitute such an interest or create a basis for bias or prejudice that will disqualify.

In the case of *Actna Insurance Company v. Travis* a suit was instituted by certain insurance companies against Travis, Commissioner of Insurance, regarding insurance rates. Certain assistants in the Attorney General's office handled the defense of that action. After Hopkins became a member of the Supreme Court the case came before the court for determination. The fact, as shown by affidavits, was that Justice Hopkins had not participated in the determination of facts, nor the merits, nor handled the defense of the case personally. This Court, discussing the question at length, stated:

The statements of Mr. Rankin and the other assistant attorneys-general are to the effect that neither the facts in the case nor the merits of the order made by the

superintendent of insurance, nor the facts on which such order was based, nor the manner of conducting the litigation, were discussed with Attorney-general Hopkins, nor directed by him. Hence, the record discloses that Attorney-general Hopkins did not handle the defense of this case personally, nor give any of the facts, nor the legal questions involved therein, his [fol. 763] personal attention. While no doubt his name was signed to demurrers or pleadings filed within his term of office, he was only nominally or officially attorney for defendant, the active attorney for defendant being Mr. Rankin and other assistant attorneys-general.

Disqualification of a judge to sit in a cause by reason of the fact that he had been of counsel for one of the parties prior to becoming a judge is based upon the theory of supposed bias for that reason. In the absence of a statute disqualifying a judge for that reason, he is not disqualified. (ss C. J. 1002; *Butler v. Scholesfield*, 54 Cal. App. 217.) The authorities hold that a prosecuting attorney who later becomes judge is not disqualified to sit in a case by reason of having had something to do with the preliminary stages of the prosecution, unless the statute specifically so provides. (33 C. J. 1005; *Eastridge v. Commonwealth*, 195 Ky., 126; *Harris v. Commonwealth*, 135 Ky., 578; *State v. Bordelon*, 141 La. 611; *State v. Turnbow*, 99 Ore. 270; *Gandia v. Stubbs*, 29 Porto Rico, 141; *Kirby v. State*, 78 Miss. 175. See, also, *Barber County Comm'rs v. Lake State Bank*, 123 Kan. 10, 252 Pac. 475.)

So, even if we had a statute in this state disqualifying a member of this court from sitting in a case in which he had been of counsel, it would not, under the facts above stated and the authorities above cited, be applicable to Justice Hopkins in this case. But we have no statute, nor provision of our constitution, providing that a judge of this court is disqualified to sit in any case by reason of having been of counsel for one of the [fol. 764] parties previous to his becoming a member of this court. We have such a statute with reference to district judges, in which case provision is made for calling in another judge, or selecting a judge pro tem., to try the case. (R. S. 20-305, 20-306.) There is a simi-

lar statutory provision as to probate judges. (R. S. 20-1108.)

No provision of our constitution, or of our statute, prescribes conditions under which a member of this court is disqualified from sitting. Neither is there any provision of our constitution or statute for calling another judge to sit in lieu of one who may be disqualified. The framers of our constitution evidently took the view that any person who had the standing and qualifications to become a member of this court would not be presumed to be biased or prejudiced by reason of the fact that some time prior to becoming a member of the court he had been an attorney for one of the parties in the action, and our legislature obviously has consistently entertained the same view. Hence there is no legal disqualification of a member of this court to sit in a cause, unless it can be said to be the common-law reason for disqualification of one who had a pecuniary interest in the result of a cause. We need not decide in this case whether that would be a disqualification, for it is not contended by plaintiffs that Justice Hopkins, or any other member of this court, is disqualified for that reason.

Since there is no method provided by our constitution or statute for having another person sit as judge of this court, if one or more members should be disqualified, 765] fled in a case, it necessarily follows that they must sit, when their views are necessary to a decision. There is no way in which questions may be decided in this court except by the decision of the members of the court. If a member were to decline to sit for a reason which is insufficient, he might be compelled to sit by mandamus. (*Montfort v. Davis*, 218 S. W. 806 [Tex. Civ. App.].) This court is organized to decide cases. There is no substitute for it, or for any one of its members, in our scheme of government. Litigants are entitled to have the essential questions in their cases decided, and the members of this court cannot avoid the duty of deciding them (33 C. J. 989, and cases there cited), and certainly cannot do so for reasons that are legally insufficient.

It necessarily follows that plaintiffs' protest against Justice Hopkins participating in the consideration and

decision of this case is neither well founded in fact nor supported by the law. It is therefore denied. Justice Hopkins took no part in the decision of this question." pp. 353, 354, 355.

It will be noted that the court in the above case says that, where there is no other means of deciding a question before the court, and the decision of the particular justice whose qualification is challenged is needed, it is his duty to sit in the case. In the above case the right of Judge Hopkins to sit was challenged for various reasons, and particularly it was alleged that his sitting in the decision of the case would constitute a denial of due process and equal protection of the law as guaranteed by the constitution of the United States. The court denied these contentions, and the Supreme Court of the United States denied a writ of certiorari.

In the case of *Evans v. Gore*, 253 U. S. 245, 64 L. Ed. 887, the plaintiff, a federal district judge for Kentucky, brought an action to recover income taxes paid where the computation was based partially upon his salary as a federal district judge. The tax in question was levied under the act of February 24, 1919, chapter 48, which required the computation of income to embrace all income "including in the case of the President of the United States, the judges of the Supreme and inferior courts of the United States . . . the compensation received as such." In due course the case reached the Supreme Court of the United States. The effect of the decision would determine also whether or not the members of the Supreme Court would be required to pay such income tax. The court held that it could not decline or renounce to decide the case, there being no appellate tribunal to which under the law the plaintiff could go, and stated, on page 247 as follows:

"Stated in its broadest aspect, the contention involves the power to tax the compensation of Federal [fol. 767] judges in general,—and also the salary of the President, as to which the constitution (art. 2, Sec. 1, Cl. 6) contains a similar limitation. Because of the individual relation of the members of this court to the question, thus broadly stated, we cannot but regret that its solution falls to us; and this although each member has been paying the tax in respect of his salary.

voluntarily and in regular course. But jurisdiction of the present case cannot be declined or renounced. The plaintiff was entitled by law to invoke our decision on the question as respects his own compensation, in which no other judge can have any direct personal interest; and there was no other appellate tribunal to which, under the law, he could go. He brought the case here in due course, the government joined him in asking an early determination of the question involved, and both have been heard at the bar and through printed briefs. In this situation, the only course open to us is to consider and decide the cause,—a conclusion supported by precedents reaching back many years. Moreover, it appears that, when this taxing provision was adopted, Congress regarded it as of uncertain constitutionality, and both contemplated and intended that the question should be settled by us in a case like this.” P. 890.

The above decision has not been changed or overruled, or distinguished, and definitely establishes and upholds the doctrine that in case of necessity, even though justices who are interested, and which otherwise would disqualify [fol. 768] them, are required to act in order that the parties to a proceeding may have it determined.

Defendants in their supplemental motion in support of their contention, that for Justice Parker to sit would constitute a denial of due process of law under the Fourteenth Amendment, cite the case of *Tumey v. Ohio*, 273 U. S. 510, 71 L. Ed. 749. That case is not applicable to the facts or the situation here. First, there were other tribunals available in which misdemeanor cases could be tried. However, the statutes of Ohio authorized cities to pass ordinances to enforce the liquor law that permitted the mayor of a town to have general jurisdiction of the enforcement of the liquor law, to act as investigator and complainant, prosecutor and judge, and then authorized him to receive \$12.00 costs from the defendant, if convicted, which went to him personally. The court held that such procedure constituted a denial of due process of law, that the receiving of a \$12.00 fee, if defendant was convicted, was such a pecuniary interest in the case that bias would be presumed. The court further held that the fact that the mayor

was charged with the duty of investigating violations at the same time he was sitting in judgment upon those arrested, was further reason to justify a pronouncement that the procedure was a denial of due process. Such case, [fol. 769] and the facts and circumstances there, are not applicable here.

In the case of *Love v. Wilcox* (Texas 1930), 28 S. W. 2d 515, 70 A. L. R. 1484, the Chief Justice of the Supreme Court of Texas was held not disqualified to sit in an action brought to require certification of certain persons on the ballot. The Chief Justice, being a candidate for the primary nomination, declined to participate. The Court said on page 1489 of the A. L. R. report, that:

"Soon after the adoption of the present Constitution, the judge of the district court of Jefferson county announced that he was embarrassed to proceed with a trial because 'of his personal interest adverse to the appellants in the questions involved in this cause.' The objection to the judge's qualification to determine the cause was overruled by the Supreme Court in an opinion by Judge Bonner, stating:

"The constitution prohibits a judge from sitting in a case in which he may be interested. Const. 1876, art. V, sec. 11.

"The statute is to the same effect. R. S., art. 1090.

"The interest of the learned judge presiding, however, was simply in the question involved, and not in the result of the suit. This was not such disqualifying interest as would prevent him from trying the cause, or would authorize the appointment of a special judge. [fol. 770] "The presiding judge not having been disqualified, it was his duty, however embarrassing, to have proceeded with the trial. *Taylor v. Williams*, 26 Tex. 583; *Railway Co. v. Ryan*, 44 Tex. 426; *Davis v. State*, 44 Tex. 523; 1 Greenl. Ev. Sec. 389. *McFaddin v. Preston*, 54 Tex. 406.

"When our present judicial amendment was adopted in 1891, without change of verbiage with respect to disqualification of judges, the court could not rightly give the language a meaning different from that ascribed to the same language in the previous constitutional provisions. Therefore the rule announced in *McFaddin v. Preston*, supra, was reaffirmed in

decisions as recent as *Hubbard v. Hamilton County*, 113 Tex. 552, 261 S. W. 990, and *Robbins v. Limestone County*, 113 Tex. 542, 261 S. W. 994.

"It is obvious that the Chief Justice, who is not a party to this suit and who has neither violated any pledge taken in 1928 nor voted during that year against any Democratic nominee or presidential elector, can have no interest other than an interest in the questions to be determined, no matter how they may be decided. Much the same sort of interest affects the associate justices. Hence, under the settled interpretation of the Constitution, it is his duty to participate in this decision.

"There are numerous decisions in other jurisdictions like that of the Supreme Court of Alabama, wherein it is said: 'The interest which will disqualify must be a pecuniary one, or one affecting the individual rights of the judge. * * * Moreover the liability of pecuniary gain or relief to the judge must occur upon the event of the suit, not result remotely, in the [Vol. 771] future, from the general operation of law upon the status fixed by the decision.' 12 Amer. & Eng. Enc. Law, p. 45 et seq.' *Ex parte Alabama State Bar Association*, 92 Ala. 113, 8 So. 768, 770, 12 L. R. A. 136; *Foreman v. Marianna*, 43 Ark. 324; *Long v. Watt*, 183 N. C. 99, 110 S. E. 765, 22 L. R. A. 279.

"The only conceivable interest of the Chief Justice in the questions here to be adjudicated is indirect, uncertain, conjectural, contingent, and remote. No man can say other than speculatively whether the court's judicial act, whatever it may be, will rebound to his advantage or detriment. On such a state of facts, the law is too well settled in this court to be open to dispute.

"In Judge Brown's carefully considered opinion in the case of the *City of Oak Cliff v. State*, 97 Tex. 391, 79 S. W. 1068, it is said: 'In his treatise on Courts, Mr. Work expresses the result of the authorities upon the question thus: "The interest which will disqualify a judge must be direct and immediate, and not contingent and remote." Page 396.'

"After reviewing the Texas cases relied upon as sustaining a contrary conclusion, Judge Brown's

opinion continues with the statement: "It is apparent from these authorities that in each case the interest of the presiding judge was directly and immediately affected by the judgment that he entered—it acted immediately upon the subject without the interposition of other authority—and each came strictly within the rule laid down by Mr. Work."

[fol. 772] "Finally, Judge Brown's opinion definitely and positively approves the declaration in a cited New York case (*In re Rogers*, 72 N. Y. 1, 28 Am. Rep. 88) that the true rule is 'that where a judicial officer has not so direct an interest in the cause or matter as that the result must necessarily affect him to his personal or pecuniary loss or gain, . . . then he may sit.' " pp. 1489 and 1490.

Thus, for the reasons set forth under A, B, C, D, and E plaintiff submits that there is no merit in the defendants' motion based upon the contention that Justice Parker is disqualified to sit. He had no personal interest in the litigation. He was only a party by reason of the fact that he held the office of Attorney General at that time. There are no facts justifying any basis for saying that he is biased or prejudiced, or for him to decline to act by reason of bias or prejudice, even though he may personally prefer not to sit, and for the reason that the defendants by their delay, and by their acts, in not raising the question at the time the matter was formally submitted to the court, have waived and are estopped to now contend that Justice Parker is disqualified, and for the further reason that the doctrine of necessity requires that he sit in judgment in this case.

In defendants' supplemental motion they cite several decisions of the Supreme Court of the United States hold[ing] that under certain circumstances there was a denial of due process in the trial of accused for failure to include on the juries people of the negro race. There is nothing in those cases that is applicable to the facts and circumstances before this court.

On page 35 of defendants' original printed motion they cite the action of the Supreme Court of the United States in deferring until a quorum of six qualified justices were obtained, a decision in the case of the Aluminum Company of America and the North American Company, both

of which were prosecuted for violating certain criminal statutes. From the United States Supreme Court docket it appears that no decision was written upon these cases with regard to the reason for the disqualification of the four judges, but simply an order made deferring decision. The extent to which the four justices may have been connected with that litigation prior to its having reached the Supreme Court of the United States does not appear. It is known that Justice Jackson, and other justices, had recently been directly connected with that type of prosecution on behalf of the Government. Therefore no inference can be taken from such action of the Supreme Court that would indicate their overruling of the hereinabove cited position of the Supreme Court of the United States, that in case of necessity the court is bound to determine a question properly before it, even though the result of their decision would be of pecuniary interest, which would normally be a sufficient reason for disqualification. None of which facts or circumstances appear in the case before this court.

II

In the second portion of defendants' motion for a rehearing defendants rely upon the case of *Weaver v. Palmer Bros. Co.*, 270 U. S. 402, 76 L. Ed. 654, and the case of *Schollenberger v. Pennsylvania*, 171 U. S. 1, 43 L. Ed. 49, saying that the first case should govern this decision, and that the second case completely overruled the case of *Powell v. Pennsylvania*, 127 U. S. 678, 32 L. Ed. 253.

Defendants have made such broad statements, and then tried to bring themselves and those cases within such statements. Neither the statements nor the holding of the court, as indicated by defendants, will bear the scrutiny of the decisions. This court need not take cognizance of what the writers of this brief say with regard to whether or not the Powell case was overruled by the Schollenberger case nor whether or not the principle of the Weaver case [fol: 775] governs under the facts and circumstances here. The Supreme Court of the United States does distinguish between those cases in the original opinion in the Schollenberger case and other courts have recognized these distinctions, and it is not necessary for plaintiff here to do more than properly point out these distinctions for you. Since

said distinctions were not pointed out in plaintiff's original brief, plaintiff feels obligated to do so here.

In the original decision of *Powell v. Pennsylvania*, supra, the Pennsylvania statute prevented the manufacture of—

“any oleaginous substance or any compound of the same, other than that produced from unadulterated milk, or of cream from the same, any article designed to take the place of butter or cheese produced from pure unadulterated milk or cream from the same, or of any imitation or adulterated butter or cheese, nor shall sell or offer for sale, or have in his, her or their possession, with intent to sell the same, as an article of food.”

The defendants offered to prove that the article sold was a new invention not injurious to the public health, but wholesome and nutritious. Such offer of proof was excluded by the trial court, which was affirmed by the Pennsylvania Supreme Court in 114 Pennsylvania 265. The U. S. court observed, on page 683:

“It will be observed that the offer in the court below was to show by proof that the particular articles the defendant sold, and those in his possession for sale, in violation of the statute, were, in fact, wholesome or nutritious articles of food.”

The court, taking judicial notice that oleomargarine butter contained ingredients that were or might become injurious to health, said:

“The court cannot say, from anything of which it may take judicial cognizance, that such is not the fact.”

The court then stated that whether or not to manufacture such a product may baffle inspection, or whether it involved such danger to public health as to require entire suppression of the business rather than regulation—

“are questions of fact and of public policy which belong to the legislative department to determine.”

The court thus recognizing that, there being some question with regard to the healthfulness of the product, it was a matter for the legislature unless all doubt was removed.

Later, in the Schollenberger case, practically the identical statute of Pennsylvania again came before the Supreme [fol. 777] Court of the United States. This is the case which defendants contend completely overruled the Powell case. It is well to point out that the question before the Supreme Court in the Schollenberger case was one regarding the *commerce clause of the Federal Constitution, whether or not a State could interfere with commerce delegated exclusively to Congress.*

Congress had by appropriate legislation placed a tax upon the manufacture of oleomargarine. The court stated in the Schollenberger case that *by such legislation Congress*

"recognized the article as a proper subject of taxation and as one which was the subject of traffic and of exportation to foreign countries and of importation from such countries. Its manufacture was recognized as a lawful pursuit,

This indicated a policy on behalf of the federal government to recognize the product as a wholesome article of commerce, but did not limit the power of the State to classify the product as it might feel necessary for the protection of the people of such state; that since the federal government had recognized the product under the commerce clause, no state could prevent importation into the state, although it could prevent the use of the product within [fol. 778] the state. In so holding the Supreme Court of the United States expressly referred to the Powell case, saying that the Powell case referred to the power of the state, and that there was no conflict between the two cases. The Kansas statute does not prevent importation into the state.

In the Schollenberger case the court said on page 15:

"It is claimed, however, that the very statute under consideration has heretofore been held valid by this court in the case of Powell v. Pennsylvania, 127 U. S. 678 (32: 253). That case did not involve rights arising under the commerce clause of the Federal Constitution. The article was manufactured and sold within the state, and the question was one as to the police power of the state acting upon a subject always within its jurisdiction. The plaintiff in error was convicted of selling

within the commonwealth two cases containing 5 pounds each of an article of food designed to take the place of butter, the sale having taken place in the city of Harrisburg, and it was part of a quantity manufactured in and, as alleged, in accordance with the laws of the commonwealth.

"The plaintiff in error claimed that the statute under which his conviction was had was a violation of the 14th Amendment to the Constitution of the United States. This court held that the statute did not violate any provision of that amendment, and therefore held that the conviction was valid.

"The Powell Case did not and could not involve the rights of an importer under the commerce clause. [fol. 779] The right of a state to enact laws in relation to the administration of its internal affairs is one thing, and the right of a state to prevent the introduction within its limits of an article of commerce is another and a totally different thing. Legislation which has its effect wholly within the state and upon products manufactured and sold therein might be held valid as not in violation of any provision of the Federal Constitution, when at the same time legislation directed towards prohibiting the importation within the state of the same article manufactured outside of its limits might be regarded as illegal because in violation of the rights of citizens of other states arising under the commerce clause of that instrument.

"Referring what is said in the opinion in Powell's Case to the facts upon which the case arose, and in regard to which the opinion was based and the case decided, there is nothing whatever inconsistent with that opinion in holding, as we do here, that oleomargarine is a legitimate subject of commerce among the states, and that no state has a right to totally prohibit its introduction in its pure condition from without the state under any exercise of its police power. The legislature of the state has the power in many cases to determine as a matter of state policy whether to permit the manufacture and sale of articles within the state or to entirely forbid such manufacture and sale, so long as the legislation is confined to the manufacture and the sale within the state. Those are questions of public policy which, as was said in the case of

Powell, belong to the legislative department to determine; but the legislative policy does not extend so far [fol. 780] as to embrace the right to absolutely prohibit the introduction within the limits of the state of an article like oleomargarine, properly and honestly manufactured." (43 L. Ed. 54, 55.)

In addition, the Supreme Court of Pennsylvania, in the recent case of *Carolene Products Company v. Harter*, 329 Pa. 49, which involved defendants' old product, discussed the contentions of the defendants that the Powell case had been overruled, and also discussed the *Weaver v. Palmer* case, stating as follows:

"Plaintiff urges that the conclusion reached in *Powell v. Pennsylvania* was weakened by the case of *Schollenberger v. Pennsylvania*, 171 U. S. 1, which held the oleomargarine statute unconstitutional so far as it attempted to prevent the importation of that article into the state from without, and its sale in the original package. (See, also, *Collins v. New Hampshire*, 171 U. S. 30, and compare with *Plumley v. Massachusetts*, 155 U. S. 461.) Plaintiff further relies upon *Weaver v. Palmer Bros. Co.*, 270 U. S. 402, which held invalid a statute of Pennsylvania forbidding the use in quilts or comfortables of shoddy, even though sterilized; the court pointing out that the evidence established that sterilization eliminates the danger, if any, from the use of shoddy, and therefore the act could not be sustained as a health measure, nor was it necessary to prevent deception; since regulations in the act or others that were adequate might be applied [fol. 781] for that purpose. However, the *Powell* and *Hebe* cases, either or both, have been cited by the United States Supreme Court with approval almost continuously down to the present time, notably in *Capital City Dairy Co. v. Ohio*, 183 U. S. 238, 246; *Hammond Packing Co. v. Montana*, 233 U. S. 331, 333; *Hoeper v. Tax Commission*, 284 U. S. 206 (where it was said in a dissenting opinion by Mr. Justice Holmes, pp. 220, 221: "It has been decided too often to be open to question, that administrative necessity may justify the inclusion of innocent objects or transactions within a prohibited class"); *Nebbia v. New York*, 291 U. S. 502, 528; *Snyder*

v. Dental Examiners, 294 U. S. 608, 613; *Baldwin v. G. A. F. Seeling, Inc.*, 294 U. S. 511, 525."

Thus it can be seen, from the *Powell* and *Schollenberger* cases, that the state is without power to prohibit the importation of an article contrary to the determination of Congress as to its character insofar as the commerce clause is concerned. *That is a right granted the federal government under the Constitution and a right which, in the present case at bar, has been exercised by the federal government in the enactment of the federal anti-filled-milk statute (Act of March 4, 1923; Chap. 262 U. S. C. A. Title 21, Sec. 61 and 63).*

In the recent case of *United States v. Carolene Products Co.*, 304 U. S. 144, 82 L. Ed. 1234, the *Powell* case was [fol. 782] again recognized when the court in that case said on page 149:

"There is nothing in the Constitution which compels a legislature, either national or state, to ignore such evidence," (that filled milks lack essential nutrients and fraudulently sold) "nor need it disregard the other evidence which amply supports the conclusions of the Congressional committees that the danger is greatly enhanced where an *inferior product*, like appellee's is indistinguishable from a valuable food of almost universal use (milk), thus making fraudulent distribution easy and protection of the consumer difficult.

"Here the prohibition of the statute is inoperative unless the product is in imitation or semblance of milk, cream, or skimmed milk, whether or not condensed." "Whether in such circumstances the public would be adequately protected by the prohibition of false labels and false branding imposed by the Pure Food and Drugs Act, or whether it was necessary to go farther and prohibit a substitute food product though to be injurious to health if used as a substitute when the two are not distinguishable, was a matter for the legislative judgment and not that of courts. *Neb. Co. v. Shaw*, 248 U. S. 297, 63 L. Ed. 255, 39 S. Ct. 125, *supra*; (and other citations). It was upon this ground that the prohibition of the sale of oleomargarine made in imitation of butter was held not to infringe the Fourteenth Amendment in *Powell v. Penn-*

sytrania, 127 U. S. 678, 32 L. Ed. 253, 8 S. Ct. 992, 1257; . . .

[fol. 783] Thus it will be seen that the Supreme Court of the United States in this recent case, decided in 1938, involving the federal statute, recognized the grounds upon which the Powell case was decided to be applicable to the filled milk statute. *These grounds, as shown by the quotation of the court above, that the constitution did not compel a legislature to ignore evidence of an inferior product like Carolene Company's which was indistinguishable from the real product, milk, and whether regulation or prohibition was necessary was a matter for the legislature, and not for the courts.*

This conclusively shows that the Supreme Court of the United States does not consider the Powell case overruled by the Schollenberger case, but, as pointed out in the decision of the Schollenberger case, that case dealt entirely with a question of the State's right to regulate interstate commerce, rather than its police power, within the boundaries of its own state to protect the health of its people and prevent deception and fraud.

The question before the court in the Weaver case was entirely one of protection of the public health. All parties in that case agreed, as the evidence showed, that sterilization of the materials eliminated all danger to the public health.

[fol. 784] In the present case we have a natural product "milk" in general use by the people. The Commissioner found that defendants' product was deficient in six essential nutrients contained in the natural product "milk." Under the decisions cited in the main brief, and the decision of the Supreme Court of the United States in the case of Carolene Products Company, this fact alone is sufficient to justify the exercise of legislative discretion. The inferiority of the product, together with the manner of sale, both constitute grounds for the exercise of the legislative discretion.

Whether the legislature exercises its discretion by regulation or prohibition is a matter only of its concern. On page 148 in the case of *U. S. v. Carolene Products Co.*, 304 U. S. 144, 82 L. Ed. 1234, the court stated:

"The power of the legislature to secure a minimum of particular nutritive elements in a widely used article

of food and to protect the public from fraudulent substitutions, was not doubted; . . . that prohibition of the offending article was an appropriate means of preventing injury to the public. . . . In twenty years evidence has steadily accumulated of the danger of the public health from the general consumption of foods which have been stripped of elements essential to the maintenance of health.

[fol. 785] Here again we see that the Supreme Court of the United States recognizes that a natural food in wide use may be protected by prohibiting substitute foods lacking in essential nutrients essential to health, even though such substitute foods may in themselves be wholesome, and may prevent the sale of such substitute foods if necessary, in the judgment of the legislature, to properly protect the health of the people. It is therefore evident that the Supreme Court of the United States refused to apply the Weaver doctrine in that case.

The indictment in that case alleged that the product "is an adulterated article of food injurious to public health." The defendants here contend that the court held that such allegation of fact being admitted upon the pleadings, left it open to present proof as to whether or not the same was true in fact, but that was not the holding of the Supreme Court of the United States in the above case. That court recognized that in some cases the constitutionality of an act might depend upon proof behind the sphere of judicial notice, but stated on page 154:

"Here the demurrer challenges the validity of the statute on its face and it is evident from all the considerations presented to Congress, and those of which we may take judicial notice, that the question is at least debatable whether commerce in filled milk should be left [fol. 786] unregulated, or in some measure restricted, or wholly prohibited. As that decision was for Congress, neither the finding of a court arrived at by weighing the evidence, nor the verdict of a jury can be substituted for it.

Although Justice Butler in a concurring opinion was of the opinion that defendant ought to be permitted to show by evidence whether in fact the product was adulterated or injurious to the public health, such concurring opinion

is not the opinion of the court. It will thus be seen that the Supreme Court of the United States took judicial notice of the fact that defendants' product did not contain all the essential elements contained within the product for which it would be substituted, and that such product was susceptible of and was sold in a manner that deceived the public. Since the court took judicial notice of these facts, its ruling was that proof could not be offered as to the healthfulness or the manner of sale of the product, and all such evidence was immaterial. It is further well to note that upon the return of this case to the district court defendants did not offer evidence but pled *nolo contendere*.

In the later case of *Caroline Products Company v. Wallace*, 27 F. Supp. 110, the federal statute again came before the court, and the syllabus of that case reads:

[fol. 787] "Where statute prohibited the shipment in interstate commerce of skimmed milk compounded with any fat or oil other than milk fat so as to resemble milk or cream, the wholesome and nutritious qualities of a product does not exclude it from the regulated class."

This case was affirmed in 307 U. S. 612, 83 L. Ed. 1495, where the Supreme Court, by confirming the lower court's decision affirmed the language there used, where it was said:

"The power of the legislature is not to be denied simply because some innocent articles may be found within the prohibited class. The inquiry must be whether, considering the end in view, the statute passes the bounds of reason and assumes the character of a merely arbitrary fiat. . . .

. . . Plaintiff's products are not shown to be different from other articles of food within the prohibited class, and the addition of needed vitamins through the presence of cod liver oil does not take plaintiff's products out of the prohibited class."

In the District Court of the United States for the Northern District of West Virginia, in the case of *United States v. Caroline Products Company, and Charles Hauser and William H. Hartke*, Indictment No. A-5216 (not yet reported) the defendants were charged with violation of the

federal filled milk act (21 U. S. C. 61). A jury was waived [Vol. 788] and the case was tried to the U. S. District Court. The judge excluded evidence as to the wholesomeness of the product quoting with approval from *Carolene Products Company v. Wallace*, 27 F. Supp. 110, as follows:

"It does not follow that because a transaction separately considered is innocuous it may not be included in a prohibition the scope of which is regarded as essential in the legislative judgment to accomplish a purpose within the admitted power of the government."

Further on in the District Court's opinion he stated:

"It is true that in the *United States v. Carolene* case (304 U. S. 145), Mr. Justice Butler wrote a brief opinion concurring in the result of that decision, but indicating that he felt that the question of the wholesome and nutritive character of the product could properly be introduced as a defense to a prosecution under the filled milk act. Mr. Justice Butler must have felt that the majority opinion of the Court was deciding that such questions could not be raised as a defense, else there would have been no occasion for filing a separate though concurring opinion. The District Court for the District of Columbia obviously took the other view and was affirmed by the latter decision of the Supreme Court. For this reason I was constrained to hold that the defense of wholesomeness and high nutritive qualities was not available in a prosecution under this Statute."

[Vol. 789] These cases show that the law cannot be defeated merely because some wholesome article might fall within the class. This principle is well demonstrated by the case of *Semler v. Oregon State Board of Dental Examiners*, 294 U. S. 608, 79 L. Ed. 1086. There the state law prevented advertising by dentists. On page 611 the court stated:

"Recognizing state power as to such matters, appellant insists that ^{with} the statute in question goes too far because it prohibits advertising of the described character, although it may be truthful. It contends that the superiority he advertises exists in

fact, that by his methods he is able to offer low prices and to render a beneficial public service contributing to the comfort and happiness of a large number of persons.

The court further stated:

"The community is concerned with the maintenance of professional standards which will insure not only competency in individual practitioners, but protection against those who would prey upon a public peculiarly susceptible to imposition through alluring promises of physical relief. And the community is concerned in providing safeguards not only against deception, but against practices which would tend to demoralize the profession by forcing its members into an unseen rivalry which would enlarge the opportunities of the least scrupulous.

[fol. 790] "It is no answer to say, as regards appellant's claim of right to advertise his 'professional superiority' or his 'performance of professional services in a superior manner,' that he is telling the truth. In framing its policy the legislature was not bound to provide for determinations of the relative proficiency of particular practitioners. The legislature was entitled to consider the general effects of the practices which it described, and if these effects were injurious in facilitating unwarranted and misleading claims, to counteract them by a general rule even though in particular instances there might be no actual deception or misstatement."

The above cases show definitely that the Weaver case is not applicable to the facts before this court. The Weaver case was not dealing with nutrition of foods, but with sanitation of quilts and comfortables. It is true that a food can be dangerous to the public health because of a noxious substance, because of lack of nutrients, or because it is unsanitary. If plaintiff here contended only that defendants' product should be prohibited because in the early stages of manufacture the cottonseed oil used in the product was subjected to a state of unsanitation, which the facts in addition showed to be completely removed by the process of sterilization in manufacture, then a set of facts would

be presented to which the Weaver case might be applicable, but such is not the fact in the case before this court. [fol. 791] The evidence of both defendants and plaintiff showed, and the Commissioner found, that certain essential nutrients are not in defendants' product that are contained in the natural well known and widely used product of whole milk. Defendants do not deny this *as so*, but say that since their product has more of Vitamins "A" and "D" than the normal amount in whole milk, it is superior in that respect, and therefore superior as a product. The fallacy of such a contention ought to be apparent upon its mere statement. Such a reasoning is the same as saying, that one quart of milk to which is added three quarts of water, and an amount of Vitamins "A" and "D", equal to or in excess of that normally contained in a gallon of whole milk, makes the resulting product wholesome and nutritious, and that because thereof, under defendant's reasoning, the Weaver case would be applicable, and would prevent any legislature from forbidding the sale of such a product; that because such a product would be sanitary it would not injure the public health, because it would be made of a quart of wholesome and nutritious milk, three quarts of wholesome and nutritious water, and wholesome and nutritious Vitamins "A" and "D," the resulting product would be a wholesome and nutritious product and non-toxic; that no person could be said to be heard of who had [fol. 792], become ill from consumption of such milk, water and vitamins; that the resulting product contained only one-fourth of the nutrients, except for the added Vitamins "A" and "D" and the three quarts of water; that even though the resulting product contained only one-fourth of the nutrients, except of Vitamins "A" and "D," that one gallon of whole milk would contain, the people of a state, acting through their legislature, could not prevent the manufacture and sale thereof, because the addition of such vitamins made the resulting product more healthful and more nutritious in that respect than one gallon of whole milk, and that, therefore, the public health would be improved because more of such vitamins got into the diet of the people, and the product could be sold at less than the cost of one gallon of whole milk, which would be beneficial to all the people because the poor, undernourished people would buy such a product on account of the price, and upon the recommendation of the company that it was

a wholesome, healthful food product, and could be used for all purposes for which milk was used, and because they could not distinguish it from whole milk; that the mere fact that retailers sold such a product as and for whole milk, and recommended it to be superior to whole milk because of such added vitamin content, and the fact that [fol. 793] the public purchased such product under such impression, believing it to be whole milk to which vitamins had been added, and used such product for all purposes for which milk would otherwise be used, including the same in the diet of infants and children, would not constitute justification for a legislature to suppress its sale because of deception, confusion, misrepresentation and fraud, for the reason that the manufacturer made a true statement upon the labels of the containers thereof, and placed a note in the original carton in which such containers were packed to send to the retailer, which notes warned retailers against selling such a product for whole milk, and where none of such notes were ever seen by the consumers. Such reasoning and conclusions are impressed upon this court in defendants' motion for rehearing, when they ask this court to follow the Weaver case. Such reasoning and contentions of defendants ask this court to invade the province of the legislative branch of the government, and to exercise a discretion reposed by our system of government only in the legislature, and to determine what ought to be good for the people. Whether such a diluted, adulterated product of milk, water and vitamins should be foisted upon the public as and for whole milk, whether Milnot, lacking in many essential nutrients of milk should be foisted upon the [fol. 794] public, whether or not it is necessary in the protection of the public health of the people of Kansas to set up standards of identity, quality, purity and sanitation for dairy products used by the people as a food, cannot be doubted to be one for the legislature, and not for the personal opinion of the judges of any court.

To what extent these standard products should be protected from non-standard, inferior, adulterated and unsanitary substitutes again is a question for the legislature and not the courts. To what extent the people should be protected from acquiring a substitute by reason of their ignorance, imposition, fraud, misrepresentation or confusion again is a question for the legislature, and not that of the courts.

It is not, as defendants contend, a question for the courts to weigh the evidence as to the need for protection, or to determine the remedy. It is not for the courts to determine if legislative conclusions are prudent or unwise. The only authority of the court is first to examine the facts to determine if there is any set of facts justifying the exercise by the legislature of its power, and, if there are such facts, then, secondly, to inquire whether the means adopted by the legislature bear a reasonable relation to [fol. 795] the object sought to be accomplished by the legislature.

The facts in the case at bar show that defendants' product does not comply with the standards of quality, identity and purity of the dairy product for which it is in fact substituted, and that the consumer buys it as and for the natural product, and so uses it. These facts show the existence of the evils, and the basis upon which the legislative discretion may be exercised by the legislature. The means adopted by prohibition certainly bears a reasonable relation to the end sought to be accomplished by the legislature, that such standard product be made available to the people without being confused by a substitute product which is indistinguishable. Thus the means adopted certainly bears a reasonable relation to the end to be accomplished.

Cases cited in the original brief of plaintiff, and in these objections, show conclusively that the majority opinion of this court in this case, upon the facts found, state the law applicable to the case on every issue presented in the case; that the Weaver case and allied cases relied upon by the defendants in their original brief, and in their motion for a rehearing, are not applicable to the facts in the case at bar. They are determined upon facts and situations [fol. 796] different from those here presented. For these reasons there is no merit in defendants' motion for rehearing.

There are some things which plaintiff desires to expressly point out in defendants' motion. On pages 16 and 17 defendants refer to the proposition that regulation would be sufficient, and that our statutes with reference to false and fraudulent advertising, and imitation names, and the authority of the State Board of Health to regulate misbranding, are sufficient means of protecting the public. The proposition of whether existing regulation,

or whether prohibition be necessary to effectively protect the public, is recognized in the case of *U. S. v. Carolene Company*, and in all the other cases dealing with this subject, as being one for the legislative determination, and not that of the court. More recently than those cases the Supreme Court of the United States in *Federal Security Administrator v. Quaker Oats Company*, 87 L. Ed. 540 (Advance Opinion) again recognizes the legislative authority to determine this question. There the Quaker Oats Company sold a product called "farina," also a product to which they added Vitamin "D" calling it "enriched farina." Under proper legislative authority the Federal Security Administrator, through the Federal Food, Drug and Cosmetic Act, promulgated regulations providing standards for milled wheat products, excluded Vitamin "D" from the defined standard of "farina," and permitted Vitamin "D" only in "enriched farina," which also was required to contain Vitamin "B₁," riboflavin, nicotinic acid and iron. Practically the same contentions were there made by the Quaker Oats Company that have been made here by defendants, that they were denied due process of law by not being permitted to sell their "enriched farina" containing only Vitamin "D," that to exclude their sale of "farina," enriched only with Vitamin "D," prevented them from selling a wholesome, healthful and nutritious food product, non-injurious in and of itself, and that regulation and proper labeling was adequate. The Supreme Court of the United States said:

"The provisions for standards of identity thus reflect a recognition by Congress of the inability of consumers in some cases to determine, solely on the basis of informative labeling, the relative merits of a variety of products superficially resembling each other."

In the first paragraph on page 16 defendants say that it is *contended by the State*, and apparently accepted in the majority opinion, that the Kansas statute authorizes the sale of powdered or dried skimmed milk, fortified with [fol. 798] fat or oil other than milk fat. No such contention was ever made by the plaintiff to this court, is not now made, and no inference to that effect can be drawn from the Court's opinion in this case. Plaintiff has at all times insisted that whether or not such sale of powdered, skimmed milk could or could not be sold, or whether the act applied

to it, was not a question for decision in this case, and apparently this Court took the same view.

In defendants' motion on page 22 they state that the only reason for the United States Supreme Court upholding the federal act was that by the demurrer to the indictment admitting the product was "injurious to public health and a fraud upon the public" left for decision of that court only the question of the congressional power to prohibit the shipment in interstate commerce of such an article of food. The court's decision, it is submitted in that case, was not based merely upon the admissions by the demurrer, but, as the majority opinion expressly pointed out, as we have shown in the earlier portion of these objections, judicial notice was taken of the fact that filled milk was inferior nutritionally to milk, and was sold in a deceptive manner.

[fol. 799]

III

In the third portion of defendants' motion for rehearing defendants again urge the economic consideration upon this court, and that they have a new and different product. Defendants rely have added nothing to a fuller treatment of the economic question in their original brief, but again rely upon the reasoning of the Weaver case which, as heretofore pointed out, is inapplicable to the facts before the court. In contending that changing conditions justifies overthrowing the statute, it need only be pointed out that the same contentions were made before Congress in 1923 as were made by the defendants in this case. They then contended that even though their product was deficient of certain nutrients, the remaining product was wholesome and healthful, and useful, and had a great demand by the public. As heretofore pointed out, these contentions are insufficient to overthrow the statute, and do not constitute any merit in their motion for reconsideration of this case by the Court.

[fol. 800] For these reasons plaintiff respectfully objects to the Court granting to the defendants a rehearing.

Respectfully submitted, A. B. Mitchell, Attorney General; C. Glenn Morris, Special Assistant Attorney General; Warden E. Noe, Special Assistant Attorney General, Topeka, Kansas; Attorneys for the Plaintiff.

AFFIDAVIT OF C. GLENN MORRIS in Connection With Defendants' Motion for Rehearing in the case of The State of Kansas, ex rel A. B. Mitchell (substituted), as Attorney General, vs. The Sage Stores Company, a Corporation, and Carolene Products Company, a Corporation, pending in the Supreme Court of the State of Kansas, No. 35143.

STATE OF KANSAS,

County of Shawnee, ss:

C. GLENN MORRIS, of lawful age, being first duly sworn, upon his oath deposes and states:

I

That on August 8, 1938, the Carolene Products Company, a Michigan corporation, instituted an action in the District Court of Shawnee County, Kansas, against J. C. Mohler, Secretary of the Board of Agriculture, and H. E. Dodge, Dairy Commissioner, of the State of Kansas, seeking to enjoin said defendants, and each of them, from enforcing the provisions of Section 65-707(f) (2), General Statutes of 1935, preventing the sale of filled milk within the State of Kansas; that C. Glenn Morris, the affiant, was at that time an Assistant Attorney General, having been duly appointed, qualified and acting under the then Attorney General, [Vol. 801] Clarence V. Beck; that when said cause came on for trial in the District Court of Shawnee County, Kansas, said affiant, at the request of the Board of Agriculture, was designated by the said Clarence V. Beck to try said cause and handle all matters in connection therewith; that said cause was tried in November, 1938, resulting in a decision denying the injunction, from which decision the Carolene Products Company appealed to the Supreme Court of the State of Kansas, where said matter was pending in January, 1939, when J. S. Parker took office as Attorney General of the State of Kansas; that the affiant was reappointed by the said J. S. Parker as Assistant Attorney General; that said J. S. Parker assigned to the various assistants in the Attorney General's office various duties respecting the advising on various questions of law to various departments, and handling of various matters coming before the Attorney General's office for attention; that, among other things, said affiant was assigned to continue handling those matters with which he was then fa-

miliar, including said case then pending in the Supreme Court, and entitled *Carolene Products Company vs. J. C. Mohler, et al.*, No. 34307; that said affiant handled all matters as chief counsel regarding said litigation, both of fact and law, in the District Court and in the Supreme Court; that said case, on appeal, in the Supreme Court was decided in the summer of 1940, upholding the lower court's decision denying said injunction; that throughout said period said affiant consulted with J. C. Mohler and H. E. Dodge, defendants, and who, under the law, were charged with the enforcement of the statute sought to be declared unconstitutional and void in that action; that said action was brought against said defendants in their official capacity, and said departments paid the expenses of said affiant, in securing of evidence, traveling in connection with said case, and the printing of all briefs and matters pertaining thereto; that at that time said lawsuit involved a product made by the Litchfield Creamery Company, of Litchfield, Illinois, and sold by said Carolene Products Company, consisting of skim milk to which had been added vitamins "A" and "D" and coconut oil.

11

That in August, 1940, after the decision of the Supreme Court in the above case had been announced, attorneys for Carolene Products Company advised affiant that they had [fol. 802] changed their product by using hydrogenated cottonseed oil as a constituent in place of coconut oil, and that they intended to sell said product in Kansas, consisting of skim milk, vitamins "A" and "D," and hydrogenated cottonseed oil, and said product was placed upon the market of retailers in the State of Kansas. At that time the said J. C. Mohler and H. E. Dodge sought advice from said affiant relative to enforcing the statute with regard to said new product. Under the advice of affiant, said J. C. Mohler and H. E. Dodge caused a survey to be made through their office as to the extent of the sale of said product in Kansas, the manner in which it was being sold, and caused certain scientific tests to be made as to the nutritive value of said product in comparison with whole, evaporated milk. At that time counsel for the Carolene Products Company advised this affiant that the new product was not in violation of the statute, and that if arrests were made said company would defend the retailers selling said product, and would raise

the constitutionality of the statute as applied to said new product, and produce expert testimony relative to the healthfulness of said product.

After affiant had seen the reports from the Board of Agriculture and the Dairy Commissioner, with regard to the extent and manner of sale of said product, and the report of the scientific tests made upon said product, he advised the said J. C. Mohler and H. E. Dodge that the statute should be enforced as to said product, but further advised that the technical defenses that would be set up, and the character of the scientific testimony that would be required, and because it would be difficult to bring scientists into Kansas away from their offices to testify; it would be advisable to institute a quo warranto proceeding against the corporation selling such product in order to adequately raise the issues in such a manner that proper testimony could be obtained. Said officials agreed with such advice. Thereupon affiant asked the Attorney General J. S. Parker, for authority to institute a quo warranto proceeding in the Supreme Court of the State of Kansas; said J. S. Parker, Attorney General, inquired the reason for the desire to institute a quo warranto proceeding, and was advised that the subject matter was of State importance; that in order to properly try the case it would be necessary to secure scientific testimony from experts outside the boundaries of Kansas, which would have to be taken by deposition for the reason that such experts would not give their time to coming to this state, and would only testify at such times as were [fol. 803] convenient with their own work, and for the further reason that the case would involve technical legal questions and considerable expert testimony, which could better be tried, in the opinion of affiant, before a court or commission than before a jury, and that the case should be tried upon its merits, and further advised that the Secretary of Agriculture and the Dairy Commissioner felt said matter to be of interest to all the people of the State, and that the contentions raised by said Carolene Products Company should be definitely determined so that their departments would know whether such a product as the Carolene Products Company was then selling was banned by the statute. The Attorney General advised said affiant that it appeared to him that the question was of sufficient importance to the people of Kansas that it should be determined, that since it appeared that a quo warranto proceeding would be a

more appropriate method of determining the issues involved, he would authorize said proceeding to be instituted on behalf of the State in his name as Attorney General, providing the expenses in connection with said litigation be assumed by the Board of Agriculture.

III

Thereafter affiant prepared a petition and filed it in the Supreme Court of the State of Kansas on the 14th day of December, 1940. At the same time said affiant prepared a motion asking for a temporary stay order against said defendants, to both of which instruments said affiant signed the name of J. S. Parker, as Attorney General, and his own and that of Warden L. Noe, as attorneys for the plaintiff, the State of Kansas; that said motion above referred to was sworn by this affiant.

IV

That shortly thereafter affiant tendered his resignation to the Attorney General to become effective on the 12th day of January, 1941, in order that said affiant might return to the private practice of law in Topeka, Kansas; that the fact of said tendered resignation came to the attention of the Secretary of Agriculture and the Dairy Commissioner, who advised affiant they desired that he continue to handle said litigation; that the State Board of Agriculture tendered employment to said affiant in said matter, which was duly accepted, and said Secretary of the Board of Agriculture [fol. 804] requested of the Attorney General that said affiant be appointed a Special Assistant to act as attorney for the State in connection with said litigation, all fees and expenses in connection with said suit, and such employment, to be assumed by the State Board of Agriculture.

That pursuant thereto J. S. Parker, Attorney General, on the 13th day of January, 1941, appointed affiant a Special Assistant Attorney General for the purpose of acting for the State in said litigation in the case of *The State of Kansas, ex rel. J. S. Parker, vs. The Sage Stores Company, a Corporation, and Carolene Products Company, a Corporation*, then pending in the Supreme Court, numbered 35143.

That said affiant has acted as chief counsel in said cause since said date, has prepared all pleadings, briefs, and other papers in connection with said cause, has arranged for the taking of testimony, appeared at all hearings, looked after all correspondence in connection with said matter, and con-

sulted from time to time with the Secretary of Agriculture, and the Dairy Commissioner, and made reports on the progress of said case to the State Board of Agriculture, and done all things appearing necessary to be done in said matter; that he has conferred regarding said lawsuit from time to time with Warden L. Noe, Attorney for the State Board of Agriculture, who also appeared at the hearings when testimony was taken in said cause, and consulted with affiant in the preparation of pleadings and briefs; that the general management and handling of said cause at all times has been under the supervision of this affiant; that from the 13th day of January, 1941, until the 11th day of January, 1943, said J. S. Parker was Attorney General of the State of Kansas; that during said period the defendants answered, other pleadings were filed, motions were filed and presented to the Supreme Court, evidence was taken before a Supreme Court Commissioner, appointed for that purpose, at various places in the United States, the case was formally submitted to the Commissioner, orally argued, and written briefs filed, and a report of the Commissioner was made and filed with the Supreme Court on the 12th day of December, 1942; that all of the traveling expense of said affiant, and other expenses incident to said lawsuit, including payments upon affiant's attorney fee, were paid by the State of Kansas through the Board of Agriculture; that at no time did J. S. Parker participate or assist in the preparation of any pleadings, motions, or other instruments filed in said cause; [Vol. 805] that at no time did he appear or take part in the taking of testimony or the presentation of any issues, either orally or by brief, to the Commissioner or the Court; that at no time did he consult with affiant, the Board of Agriculture, Mr. Mohler, Mr. Dodge, or Mr. Noe in conferences held with regard to the evidence and law in the case; that this affiant, when pleadings were filed in the case or briefs prepared, signed the name of J. S. Parker to such instruments; that all files in connection with said matter have been kept since the 13th day of January, 1941, and are, in the office of this affiant, in connection with said litigation.

V

On the 11th day of January, 1943, said J. S. Parker became a Justice of the Supreme Court of the State of Kansas, having been duly elected and qualified, and A. B. Mitchell became Attorney General of the State of Kansas; that there

after, upon motion, said A. B. Mitchell was substituted as Relator in said cause in place of J. S. Parker; that since the 11th day of January, 1943, until the present time, said J. S. Parker has had no connection with said cause whatever, except as a Justice of the Supreme Court of the State of Kansas.

Further affiant saith not.

Dated this 4th day of November, 1943.

C. Glenn Morris, Affiant.

Subscribed and sworn to before me this 4th day of November, 1943. Esther B. Rollman, Notary Public. My commission expires October 29, 1944.
(Seal.)

STATE OF KANSAS,

COUNTY OF SHAWNEE, ss:

WARDEN L. NOE, of lawful age, being first duly sworn, upon his oath, deposes and states:

That he has consulted with C. Glenn Morris, who has acted as chief counsel in the case of *The State of Kansas, ex rel. A. B. Mitchell (substituted), as Attorney General, vs. The Sage Stores Company, a Corporation, and Carolene Products Company, a Corporation*, pending in the Supreme Court, No. 35143, attended the taking of testimony, and [fol. 806] assisted in the preparation of pleadings and briefs; that he has read the affidavit of said C. Glenn Morris; that he did not at any time during the pendency of said above cause consult with J. S. Parker upon the merits or the law involved in said cause, and that said matter, so far as the securing of testimony and the handling of said case, has been done by the said C. Glenn Morris in consultation with himself and the Secretary of Agriculture and the Dairy Commissioner; that the general manner in which said cause has been handled, as stated in the affidavit of C. Glenn Morris, is true and correct.

Further affiant saith not.

Dated this 5th day of November, 1943.

Warden L. Noe, Affiant.

Subscribed and sworn to before me this 5th day of November, 1943. Gertrude Whitecomb, Notary Public. My commission expires April 19, 1947.
(Seal.)

STATE OF KANSAS,
COUNTY OF SHAWNEE, SS:

J. C. MOHLER, of lawful age, being first duly sworn, upon his oath, deposes and states:

That he is Secretary of the State Board of Agriculture, and was Secretary of the State Board of Agriculture during the period of time that the litigation in the filled milk case has been under consideration; that when C. Glenn Morris resigned from the Attorney General's office he was employed, on behalf of the State of Kansas, by the State Board of Agriculture, to act as chief counsel in the litigation then pending in the case of *The State of Kansas, ex rel. A. B. Mitchell, (substituted), as Attorney General, vs. The Sage Stores Company, a Corporation, and Carolene Products Company, a Corporation*, Case No. 35143; that J. S. Parker was requested by affiant to appoint the said C. Glenn Morris, Special Assistant Attorney General in order that he might have the proper legal status to act for the State of Kansas in said litigation in coöperation with affiant, the Dairy Commissioner, and the State Board of Agriculture, charged by law with the enforcement of the statute in question; that the Board of Agriculture had determined it would be to the advantage of the State to secure the services of said C. Glenn Morris because he was familiar with the litigation involved [fol. 807] in said lawsuit, and was in a position to devote the time and attention to the case that would be required.

Further affiant saith not.

Dated this 5th day of November, 1943.

J. C. Mohler, Affiant.

Subscribed and sworn to before me this 5th day of November, 1943. Gertrude Whitcomb, Notary Public. My commission expires April 19, 1947.
(Seal.)

[fol. 808] IN THE DISTRICT COURT OF THE UNITED STATES FOR
THE NORTHERN DISTRICT OF WEST VIRGINIA

Indictment No. A-5216

UNITED STATES OF AMERICA

vs.

CAROLENE PRODUCTS COMPANY, a Corporation, and CHARLES
HAUSER, and WILLIAM H. HARTKE

Joe V. Gibson, Esq., United States Attorney; Ezra E.
Hamstead, Esq., Assistant United States Attorney, of
Clarksburg, West Virginia; Mark C. Reno, Esq., Attorney,
Department of Justice; John A. Murphy, Esq., Attorney,
Food & Drug Administration, of Washington, D. C., For the
United States; Handlan, Garden & Matthews, Howard D.
Matthews, Esq., G. Alan Garden, Esq., Lester C. Hess,
Esq., of Wheeling, West Virginia; Kaufman & Cronan,
Samuel H. Kaufman, Esq., Edward Rohr, Esq., of New
York City, New York, for the Defendants.

BAKER, District Judge:

The defendants, Carolene Products Company, a corpo-
ration, and Charles Hauser and William H. Hartke, indi-
viduals, were indicted at the October Term, 1942, at Wheel-
ing, W. Va., for a violation of what is commonly known as
the "filled milk act of 1923." (21 U. S. C. 61.)

The Carolene Products Company is a Michigan Corpora-
tion, whose sole business is the sale of three products,
[fol. 809] known respectively as "Milnot," "Milnut," and
"Carolene." Milnut was, briefly, a product resulting from
the mixture of coconut oil, skimmed milk, and fish oils.
Milnot was the same product except that cottonseed oil
was substituted for coconut oil. Both of these products
are sold under the name of "Carolene." Since, for the pur-
pose of this case the distinction between the three products
is entirely immaterial, I will refer to the company's product
as "Carolene" throughout this opinion.

Carolene is manufactured by the Litchfield Creamery
Company, a corporation, operating creameries in Litchfield,
Illinois, and Warsaw, Indiana. Throughout this opinion all
dates, when material, will be as of the year 1941, unless
specifically stated otherwise.

The defendant, Charles Hauser, was President of the Carolene Products Company; was one of the original incorporators thereof, and a director of that company. The defendant, William H. Hartke, was President of the Litchfield Creamery Company and Vice-President of the Carolene Products Company. The main officers of the Carolene Products Company were maintained at the Litchfield Creamery Company's Litchfield plant and the same rooms in that plant served for offices of both the Carolene Products Company and the Litchfield Creamery Company. Charles Hauser's office was in the Litchfield Creamery Company's plant, from which office he carried on his duties in relation to both companies. This same office was used by Hartke to transact his business in connection with the two companies. In short, the Carolene Products Company was a corporation, which marketed one of the products of the Litchfield Creamery Company.

The indictment in this case, as noted above, is brought under Title 21, Sections 61, 62, and 63, which reads as follows:

"Section 61. *Filled milk; definitions.* Whenever used in sections 62 and 63 of this title—

"(a) The term 'person' includes an individual, partnership, corporation, or association;

"(b) The term 'interstate or foreign commerce' means commerce (1) between any State, Territory, or possession, or the District of Columbia, and any place outside thereof; (2) between points within the same State, Territory, or possession, or within the District of Columbia, but through any place outside thereof; or (3) within any Territory or possession, or within the District of Columbia; and

[fol. 810]. "(c) The term 'filled milk' means any milk, cream, or skimmed milk, whether or not condensed, evaporated, concentrated, powdered, dried, or desiccated, to which has been added, or which has been blended or compounded with, any fat or oil other than milk fat, so that the resulting product is in imitation or semblance of milk, cream, or skimmed milk, whether or not condensed, evaporated, concentrated, powdered, dried, or desiccated. This definition shall not include any distinctive proprietary food compound not readily

mistaken in taste for milk or cream or for evaporated, condensed, or powdered milk, or cream where such compound (1) is prepared and designed for feeding infants and young children and customarily used on the order of a physician; (2) is packed in individual cans containing not more than sixteen and one-half ounces and bearing a label in bold type that the content is to be used only for said purpose; (3) is shipped in interstate or foreign commerce exclusively to physicians, whole sale and retail druggists, orphan asylums, child welfare associations, hospitals, and similar institutions and generally disposed of by them.

“62. *Same; manufacture, shipment, or delivery for shipment in interstate or foreign commerce prohibited.* It is declared that filled milk, as herein defined, is an adulterated article of food, injurious to the public health, and its sale constitutes a fraud upon the public. It shall be unlawful for any person to manufacture within any Territory or possession, or within the District of Columbia, or to ship or deliver for shipment in interstate or foreign commerce, any filled milk.

“63. *Same; penalty for violations of law; acts, omissions, and so forth, of agents.* Any person violating any provision of section 61 and 62 of this title shall upon conviction thereof be subject to a fine of not more than \$1,000 or imprisonment of not more than one year, or both. When construing and enforcing the provisions of said sections, the act, omission, or failure of any person acting for or employed by any individual, partnership, corporation, or association, within the scope of his employment or office, shall in every case be deemed the act, omission, or failure, of such individual, partnership, corporation, or association, as well as of such person.

[fol. 811] The indictment is in eight counts, charging eight separate shipments of filled milk from Warsaw, Indiana, to Clarksburg, Parkersburg, Weston, Morgantown, and Moundsville, in the Northern District of West Virginia. All these shipments were made between February and July of the year 1941, and totaled 5,800 cases, of 48 cans to the case.

Many of the pertinent facts were stipulated upon the trial of this case. Such proof as the Government did introduce

was not denied by the defendants. Therefore, there is really no dispute as to the facts involved. They are briefly as follows:

The Litchfield Creamery Company would bring into its Warsaw, Indiana, plant, whole milk procured from the farmers in that vicinity. The cream was then separated from this milk. To the skimmed milk thus obtained was added a sufficient quantity of cotton-seed oil to replace the butter fat extracted with the cream. There was also added a small quantity of high potency fish-liver oil to introduce vitamins A and D into the product. The entire product was then evaporated to the consistency of that ordinarily found in condensed whole milk. It was then homogenized; that is, it was forced under great pressure through small openings, resulting in the breaking up of the fat globules in the cottonseed oil and distributing the same evenly through the entire body of the resulting mixture, thus insuring that when this product was canned the oil would not rise to the top but would remain suspended through the entire volume of milk. Upon the completion of the evaporation and homogenization, the product was placed in cans, the cans labeled and packed in cases. The cases, in turn, were placed in the warehouse at Warsaw. Thompson, the manager of the Warsaw plant, was originally employed by Hauser. He received his orders as to bills of lading from Hartke and Hauser.

The Company had salesmen calling upon the various wholesale grocers in the country and soliciting and taking orders for "Carolene." These orders were sent into the main office at Litchfield, and the Litchfield Office would then contact the plant at Warsaw, usually by telephone, sometimes by written order, and instruct the Manager of the Warsaw plant to ship a designated number of cases of Carolene to a given purchaser. These cases were shipped by railway freight, the Carolene Products Company being designated as consignor. Payment for the goods was made [fol. 812] to the office at Litchfield, checks being banked with a rubbered-stamp endorsement of the Carolene Products Company.

This same business was being carried out at the Litchfield plant; however, in this particular case, all shipments were actually made from Warsaw.

In the year 1941, the Warsaw plant sold 440,000 cases, and the Litchfield plant, 1,150,000 cases of Carolene. Ap-

proximately half of this total output was shipped in interstate commerce.

The product "Carolene" looked, tasted, and smelled like condensed whole milk and was of practically the same texture and consistency. It was packed in cans of the same size and shape customarily employed by packers of condensed, whole milk.

When the indictment was returned, a demurrer and a plea in abatement were filed thereto by each of the defendants. The Government demurred to the plea in abatement. Both the demurrer and the plea in abatement raised the same defense, that was, briefly, that the filled milk act does not apply to Carolene, or, if it does so apply, that as to Carolene the said act is unconstitutional. The demurrer to the indictment was overruled, and the demurrer to the plea in abatement was sustained. Since the questions presented, however, really constituted the only defense by the corporations, I feel my ruling thereon shall be briefly reviewed at this time.

The contention of the defendants was that the product "Carolene" was a wholesome, nutritive article of food; that their labels properly branded the article; and that no fraud was perpetrated upon the public by its sale. For this reason they maintained that the filled milk act did not apply to this product. There is no contention by the Government that the defendants' labels violate any Act of Congress or regulation passed thereunder, and the labeling question is completely outside of this case. The other part of the defense, namely, that the product is wholesome and nutritive was argued at great length and with much ability by counsel for the defendants, both in their oral presentation and in their briefs filed with the Court. That argument boils down to about this contention, that about the time the filled milk act was passed, the commercial fortification of food products by the addition of vitamins not naturally present was not known to science. They contend that in 1923 medical science knew very little about vitamins. They further contend that the Congress' purpose in passing the filled milk act in 1923 was to keep the public from using [fol. 813] as food a milk product from which the essential vitamins had been removed, and that now, in the light of present knowledge, it is possible to replace those vitamins by the addition of fish oil, and that, therefore, their product

"*Carolene*" is not such a product as was intended by Congress to be prohibited; or that if the Court holds that it is such a product, that then the Act is unconstitutional. (Italics is added.)

Fortunately for the Court this Statute has been construed in regard to the very product here involved. In the case of *United States vs. Carolene Products Company*, 304 U. S. 144, the Court held that the Act was, on its face, constitutional. In a later case, *Carolene Products Company vs. Wallace*, 27 F. Supp. 110, the District Court for the District of Columbia had before it the construction of this Statute as applying to this identical product; that is, "*Carolene*," to which high potency fish oil had been added. In that case the Court, in its discussion, used the following pertinent language:

"The Issue which plaintiff presents draws in question the legislative judgment and we think the Congressional hearings and reports in evidence, clearly reveal a state of facts which furnishes ample support for the legislative action of which plaintiff complains. Upon the considerations placed before the committees and the Congress it became a legislative function to regulate, restrict or prohibit articles of food, though wholesome and nutritious in the exercise of its commerce power. Legislative acts, when subjected to judicial scrutiny, must be presumed to rest on a rational basis if such would exist under any conceivable state of facts; and if a practical question be addressed to the law making department it will require a plain case of departure from every public purpose which could reasonably be conceived to justify the intervention of a court: when public evils ensue from individual misfortune or need, the legislature may strike at the evil at its source. If the purpose is legitimate because public, it will not be defeated. *Carmichael v. Southern Coal Co.*, 301 U. S. 495, 518, 57 S. Ct. 868, 81 L. Ed. 1245, 109 A. L. R. 1327."

And further on in the Opinion

"It does not follow that because a transaction separately considered is innocuous it may not be included in a prohibition the scope of which is regarded as [fol. 814] essential in the legislative judgment to

accomplish a purpose within the admitted power of the Government. Unless it clearly appears that the enactment has no substantial relation to a proper purpose, it cannot be said that the limit of legislative power has been transcended. Judicial opinion of expediency may not be substituted for the will of the legislature. *Purity Extract Co. v. Lynch*, 226 U. S. 192, 33 S. Ct. 44, 57 L. Ed. 184. The case is authority for the proposition that since the opinion is extensively held that a general prohibition of sale of malt liquors whether intoxicating or not is necessary to suppress the sale of intoxicants, in the exercise of its police power a state may include within the prohibition innocent malt beverages.

The reports of the Congressional committees reveal the considerations placed before the Congress. The report of the House committee indicates that it was found and believed that filled milk had taken the place of thousands of pounds of butter fat, injuring the market of the American farmer, bringing his product into competition with an inferior product produced by oriental and other cheap labor and handled in many instances under shockingly insanitary conditions. These committees reported to Congress that filled milk lends itself to fraudulent marketing practices. Indeed the Senate committee reported that it was of opinion that it is impossible to prevent fraudulent use and sale of the compound on account of the incentive of additional profit. The reports further represented to Congress that filled milk was an inferior product. They made reference to 'Carolene' by specific mention and found that it and other filled milk products were lacking in certain vitamins which are absolutely necessary to promote growth in the human body. Whether as plaintiff contends it has overcome this condition of inferiority by adding to its products cod liver oil supplying in the 'New Vitamin A Carolene' and the 'New Vitamin A Milnut' the vitamins found to be lacking in the earlier product, need not be determined since we find that other considerations before the Congressional committees were of sufficient public concern to justify the exclusion of filled milk as defined by Congress, from movement in interstate commerce.

[fol. 815] The Opinion is well summed up by Point 1 of the Syllabus, reading as follows:

"Where statute prohibited the shipment in interstate commerce of skimmed milk compounded with any fat or oil other than milk fat so as to resemble milk or cream, the wholesome and nutritious qualities of a product does not exclude it from the regulated class."

An appeal from this Opinion was taken to the Supreme Court of the United States, which granted a motion to affirm, 307 U. S. 612.

It is true that in the *United States vs. Carolene* case (304 U. S. 145), Mr. Justice Butler wrote a brief opinion concurring in the result of that decision, but indicating that he felt that the question of the wholesome and nutritive character of the product could properly be introduced as a defense to a prosecution under the filled milk act. Mr. Justice Butler must have felt that the majority opinion of the Court was deciding that such questions could not be raised as a defense, else there would have been no occasion for filing a separate though concurring opinion. The District Court for the District of Columbia obviously took the other view and was affirmed by the latter decision of the Supreme Court. For this reason I was constrained to hold that the defense of wholesomeness and high nutritive qualities was not available in a prosecution under this Statute.

The defendants waived a jury and the case was tried by the Court.

One defense urged in the brief for the defendants is that there was no proof on the trial that Carolene "is in imitation or semblance of milk, cream or skimmed milk whether or not condensed, etc." It was stipulated that if called as witnesses the Government Chemists, Bornmann and Kunke would testify that they had analyzed and examined samples taken from each shipment charged in the indictment, and that each were virtually indistinguishable from evaporated milk in taste, color, odor, appearance, and consistency. There was no evidence to the contrary; in fact, counsel for defendants, during a colloquy with the Court, stated that Carolene looked, tasted, smelled, and had the consistency of ordinary condensed milk. While statements of Counsel may not be evidence in a case, the stipulated testimony of Bornmann and Kunke sustains, beyond a rea-

sonable doubt, the finding that Carolene is in semblance of milk. In addition, there is the testimony of Thompson, the [fol. 816] Manager of the Warsaw plant, that Carolene could not be distinguished by the eye from condensed milk.

It should be noted that the Statute uses the subjunctive and bars to interstate commerce the product if it "is in imitation or semblance of milk.) Under this Statute it is not necessary to prove a conscious imitation so long as the product is in semblance of milk; that is, so long as it reacts to the human senses as milk would react. I, therefore, find that the evidence proves, beyond a reasonable doubt, Carolene to be in semblance of condensed milk.

With this finding and with the defense set up in the demurrer and plea in abatement overruled, the corporation must be held guilty, since the addition of fat, other than butter fat, to a skimmed milk product, and the interstate shipment thereof, has been admitted; at least, as to the corporation.

This brings us to the question of the guilt of the individual defendants, Charles Hauser and William H. Hartke. In the first place, it is admitted by the Government, at least in its brief, that there is no evidence to show that either of the individual defendants personally made or even had knowledge of the eight specific shipments complained of in this indictment. On the other hand, the evidence conclusively shows that the individual defendants were the active, directing heads of both the Carolene Products Company and its parent corporation, the Litchfield Creamer Company, and that as such directing heads they caused the Carolene Products Company to engage in an extensive shipment of Carolene in interstate commerce. In this connection, it should be borne in mind that the Carolene Products Company had only one business, which was the sale of Carolene. Half of this business consisted of sales which resulted in shipping the product in interstate commerce. Therefore, under my ruling, 50 per cent of the company's business was illegal. We do not here have the case of a violation of Federal law resulting therefrom. We have a case in which 50 per cent of the company's business resulted in violations of the filled milk act. No one could read the record in this case and come to any conclusion other than that Mr. Hartke and Mr. Hauser knew that the company was shipping this product in interstate commerce practically every business day. We must also bear in mind that intent is not a necessary element of this offense.

The question of the criminal liability of corporate officers for the acts of a corporation has been before the Courts [vol. 817] many times. A brief summary of some of the more important decisions might be enlightening.

In the case of *United Cigar Whelan Stores Corporation, et al., v. United States*, 113 F. 2d 346, a manager of a cigar store was held properly convicted of illegal sales of denatured alcohol by store clerks, even though he was not actually present in the store at the time the sales were made. In commenting upon this feature of the case, the Court said, at page 346:

"Neither does any reason present itself why Dehne was not properly found guilty of all sales, rather than those only in which he physically participated. Dehne was manager of the store, in a position of responsibility, the others were merely clerks; the business was carried on under his direction, as agent for the corporate defendant. 'It is not necessary that an aider or abettor be present at the actual commission of the offense or know details thereof. *Collins v. United States* (8 Cir.), 20 F. 2d 574, 578; *Parise v. United States* (2 Cir.); 279 F. 253, 255.' *Borgia v. United States*, supra, at page 555 of 78 F. 2d."

In the case of *Wood et al., vs. United States*, 204 F. 55, our own Circuit Court of Appeals for the Fourth Circuit held that an indictment for unlawfully carrying on the business of distillers with intent to defraud the United States, or having a still under their superintendence, is supported by proof that the distillery was owned by a corporation of which defendants were the officers and manager.

In the course of the Opinion, Judge Rose, then on the District Court Bench, but sitting with Judges Goff and Pritchard, on the Circuit Court of Appeals, said, on page 58:

"A corporation can only act through human agencies. If the persons who actually direct and commit the frauds upon the government are not distillers or persons having the indictment under consideration, no one can ever be in those cases in which the distillery belongs to and is operated by a corporation. Speaking with precise technical accuracy, it may be said that what happened was that the corporation committed these offenses and that the defendants and each of

them knowingly, willfully, and actively aided, abetted, and procured their commission."

[fol. 818] The same general principal of law was announced by the Fourth Circuit Court of Appeals in the more recent case of *Backun vs. United States*, 112 F. 2d 635. In this case Backun was convicted of transporting stolen merchandise of value in excess of \$5,000 in interstate commerce, knowing it to have been stolen. The evidence showed that Backun in New York sold certain stolen silverware to one Zucker, who took it with him on a trip through the South and resold it there. The conviction was reversed for failure of proof that the goods stolen did exceed the value of \$5,000.00, but Judge Parker, in his Opinion, clearly sets forth that one who makes a profit by furnishing to criminals, either by sale or otherwise, the means of carrying out their undertakings, becomes equally guilty in the transaction.

The criminal liability of corporate officers, for the acts of a corporation, has been frequently before the various State Courts. In *People vs. Detroit White Lead Works, et al.*, 82 Mich. 471, 46 N. W. 735, the Court, at page 737, said:

"The officers of the company are jointly responsible for the business. It is not necessary to have conviction that they should have been actually engaged in work upon the premises. The work is carried on by employees. The directors and officers are the persons primarily responsible, and therefore the proper ones to be prosecuted."

In the case of *Craig et al., vs. Commonwealth*, 49 S. E. 638, (a Virginia case), a corporation and its Vice President were charged with peddling goods without a license. The defendants contended that the corporate officer could not be convicted since he did not actually make any sales. The Court said (p. 640):

"This statement of the law is too narrow, and if followed, would in many instances afford immunity to the chief offenders, the officers of the corporation, without whose assistance it would be impossible for the corporation to engage in the prohibited business. A corporation can act alone through its officers and agents, and where the business itself involves a violation of

the law the correct rule is that all who participate in it are liable."

Title 18, Section 550, "Whoever directly commits any act constituting an offense defined in any law of the United States, or aids, abets, counsels, commands, induces, or procures its commission, is a principal," makes all aiders and [fol. 819] abettors of a crime principals therein. Under this Section an accessory, either at or before the fact, may, at the pleader's option, be charged directly with the commission of the crime, and be convicted by proof that he aided and abetted its commission. *Greenburg vs. U. S.*, 297, F. 45, *Wood vs. United States* 204 U. S. 55, etc., 31 Corpus Juris 740.

The individual defendants say that they should be acquitted because there is no evidence that they made the shipments of "Carolene," or that they had personal knowledge that the precise shipments, alleged in the indictment into the Northern District of West Virginia, were to be made or were, in fact, made. As noted above, Hauser was President of Carolene Products Company, and Hartke was Vice President. Both were directors and both maintained their offices in one of the plants in which "Carolene" was manufactured. A corporation can act only through agents. Speaking with precise technical accuracy, it may be said that what happened in each instance alleged in the indictment was that the corporation, Carolene Products Company, committed the specific offense, and that the defendants, Charles Hauser, President, and William H. Hartke, Vice-President, willfully and actively aided and abetted the corporation in this regard. There is an abundance of evidence in the record to convince me, beyond a reasonable doubt, that that was precisely what the two individual defendants did in this case; hence, since they are proven by the evidence to have been aiders and abettors, they must, under Title 18, Section 550, be held guilty as principals, and I now so hold them.

As noted above, intent is not a necessary element of this offense; yet, common sense leads us to a query as to just why there is a Carolene Products Company. Hauser and Hartke had the Litchfield Creamery Company. This company was engaged in the manufacture and sale of general dairy products, including evaporated whole milk. It also manufactured this one product, "Carolene," which it, for

some reason, did not wish to sell under its own name, and for the sale of that one product organized a separate corporation. There must have been some reason for this else why the trouble and expense of maintaining two sets of books, two organizations, etc. Often corporations resort to a subsidiary to sell substandard goods. We all know that many of our large concerns sell defective products, "seconds," by this means. But here, the defendants contended in their plea, demurrer, and all through the trial, [fol. 826] that "Carolene" is as good and wholesome as condensed milk. There may be a legitimate answer, not in the record, but only one occurs to me, and that is that Hauser and Hartke knew "Carolene" violated the filled milk act and organized the company to protect the Litchfield Creamery Company from a violation of the law.

It should be borne in mind, in this connection, that I am bound by the Act of Congress in this case. The defendants, in their proffer, made a strong case for the wholesomeness and nutritive value of their product. It is true that under my ruling excluding this evidence the Government had no opportunity to rebut it, nor even to cross-examine defendants' witnesses; nevertheless, I again agree with Judge Letts (see *Carolene Products Company vs. Wallace*, 27 F. 119), wherein he found, as a fact, that the plaintiff's products are wholesome. This defense, however, must be presented to Congress and not the Courts. As the Supreme Court of the United States recently said: (*Italics added.*)

"The government presses upon us strong arguments of policy against the statutory plan, but the entire force of these considerations is directed solely at what the government thinks Congress should have done rather than at what it did. It is said . . . and finally that conditions have changed since the Act was passed in 1863. But the trouble with these arguments is that they are addressed to the wrong forum. Conditions may have changed, but the statute has not."

United States ex rel. Marcus, vs. Hess, 317 U. S. 537, especially 546.

W. E. Baker, U. S. District Judge.

September 7, 1943.

[fol. 59] IN THE SUPREME COURT OF THE STATE OF KANSAS

Topeka, Saturday, December 11, 1943.

No. 35,143

STATE OF KANSAS ex rel., A. B. MITCHELL (substituted), as
Attorney General, Plaintiff,

vs.

THE SAGE STORES COMPANY, a Corporation, and CAROLENE
PRODUCTS COMPANY, a Corporation, Defendants

Now comes on for decision the motion of the defendants for a rehearing in this cause and after due consideration by the court, it is ordered and adjudged that the motion be denied.

WEDELL, J. delivered the opinion of the court, all the justices concurring except Mr. Justice PARKER did not participate in that part of the motion for rehearing which pertains to the subject of his qualification.

[fol. 60] Be It Further Remembered, that on the 11th day of December, 1943, there was filed in the office of the Clerk of the Supreme Court of the State of Kansas the Syllabus and Opinion denying a motion for a rehearing, a copy of which Syllabus and Opinion is in the words and figures as follows, to-wit:

[fol. 61]

No. 35,143

THE STATE OF KANSAS, ex rel. A. B. MITCHELL (substituted) as Attorney General, etc., *Plaintiff*, v. THE SAGE STORES COMPANY and CAROLENE PRODUCTS COMPANY, *Defendants*

OPINION ON MOTION FOR REHEARING

Syllabus by the Court

JUDGES—*Previous Connection with Litigation—Disqualification.*—The motion for rehearing in an original quo warranto action examined, considered and held: (1) The contention that one of the justices of this court was disqualified to participate in the decision is not sustained; (2) the

motion, insofar as it pertains to the merits of the decision, is likewise denied.

Original proceeding in quo warranto. Opinion on motion for rehearing filed December 11, 1943. Rehearing denied. (For original opinion see *ante*, p. 404.)

C. Glenn Morris and *Warden L. Noe*, both of Topeka, argued the cause, and *A. B. Mitchell*, attorney general, was on the briefs for the plaintiff.

Tinkham Veale, of Topeka, argued the cause for defendant Sage Stores Company; and *T. M. Lillard*, of Topeka, and *Boyle G. Clark*, of Columbia, Mo., argued the cause, and *Paul M. Peterson* and *W. L. Nelson, Jr.*, both of Columbia, Mo., were on the briefs for defendant Carolene Products Company; *Clark, Boggs, Peterson & Becker*, of Columbia, Mo., of counsel.

The opinion of the court was delivered by

WEDELL, J.: This case is here on a motion for rehearing. It was an original action in quo warranto to oust The Sage Stores Company, a Kansas corporation, from doing a general merchandising business in this state but more particularly to prevent it from selling a filled-milk product made and distributed by the defendant Carolene Products Company on the ground its sale was prohibited by G. S. 1935, 65-707. Plaintiff, the state of Kansas, prevailed as a result of a four to three decision.

The action was brought in the name of the state on the relation of attorney general, Jay S. Parker, who is now a justice of this court.

The first contention of defendants is that Mr. Justice Parker, who concurred in the majority view, was disqualified to participate in the decision and that his participation constituted a denial of due process of law in violation of the fourteenth amendment to the federal constitution.

At the outset we are confronted with plaintiff's contention that defendants cannot now raise the question of disqualification for the reason that they waived any objection to Mr. Justice Parker's participation by failing to object to his sitting in the case when it was orally argued before this court and objected only after they discovered he had joined in the majority view against them. In that view defendants do not concur. They argue that when the

justice retained his seat after the case was called for oral argument they assumed he was doing so as an interested spectator who desired to hear the arguments because it was an important case in which he had been the relator plaintiff and that it did not occur to them he would participate in the decision. The question of waiver is an interesting one, but we prefer to go directly to the merits of the contention on disqualification.

In answer to the motion for rehearing plaintiff has filed the affidavits of J. C. Mohler, secretary of the state board of agriculture, and of C. Glenn Morris and Warden L. Noe, special assistant attorneys general. Mr. Morris was chief counsel and directed the litigation with the assistance of Mr. Noe in both cases hereinafter mentioned. In the first case they represented the defendants, state officials, to be named presently. In the instant action they represented plaintiff, the state of Kansas. The affidavits contain a rather complete history of this and of the former case involving the same filled-milk statute. That history, among other things, discloses the parties to and the nature of the respective actions, the substance of the decision in the former action and the nature and character of the relation of Jay S. Parker, attorney general, to those cases.

There is no contention the affidavits do not constitute a substantially accurate statement of the facts pertaining to Attorney General Parker's relation to the respective cases. Pertinent portions of the affidavits in substance disclose the following facts:

The state board of agriculture and the state dairy commissioner are charged by law with the enforcement of the milk and dairy laws of this state. In 1938 one of the defendants in the instant quo warranto action, namely, Carolene Products Company, instituted a suit in the district court of Shawnee county to enjoin J. C. Mohler, secretary of the board of agriculture, and H. E. Dodge, dairy commissioner of the state, from enforcing this identical statute against a similar filled-milk product. The action was instituted while Clarence V. Beck was the attorney general of this state. That action had been tried in the district court [fol. 63] and was pending on appeal in this court when Jay S. Parker became attorney general in January, 1939. The case was decided in June, 1940. It was determined the statute was constitutional as a health measure although it prohibited the sale of a product assumed to be whole-

some. (*Carolene Products Co. v. Mohler*, 152 Kan. 2, 102 P. 2d 1044.) Attorney General Parker had in nowise counseled or assisted in conducting that litigation. Mr. Morris, an assistant attorney general, handled that litigation.

Sometime after that decision counsel for Carolene Products Company advised Mr. Morris it had made some changes in the constituent elements of its product (for changes see opinion in instant case; *State, ex rel. v. Sage Storage Co.*, ante, p. 404, 144 P. 2d 655); that it had placed the new product with retailers in this state; if they were prosecuted for its sale under the statute, Carolene Products Company would defend the prosecutions and raise the constitutionality of the statute. The state board of agriculture and the state dairy commissioner wanted the statute enforced. They and Mr. Morris agreed an original action in quo warranto should be instituted in this court and they sought the permission of Attorney General Parker to file such an action in the name of the state on the relation of the attorney general. The permission was granted and they filed the instant action with the understanding the litigation should be conducted at the expense of the state board of agriculture. Attorney General Parker permitted them to file the action for the reason the enforcement of the statute was a matter of public concern and in order that any question which might arise in connection with its enforcement could be adjudicated in this court. In the conduct of the instant litigation which followed, Attorney General Parker in nowise personally or officially took any active part. He was not consulted concerning any issue of fact or law involved nor did he advise concerning the same. While his name was signed to pleadings by Mr. Morris, Attorney General Parker was only nominally or officially attorney for the state, the active attorney and general counsel for the state being Mr. Morris, who was assisted by Mr. Noe, attorney for the state board of agriculture. Shortly after the instant action was filed Mr. Morris resigned as assistant attorney general to enter the private practice. Mr. Morris was then employed by the state board of agriculture to continue to act as chief counsel in the case and that board agreed to pay for his professional services. He has been and is being paid by the state [fol. 64] through the state board of agriculture. Upon request of the state board of agriculture the attorney general

appointed Mr. Morris a special assistant attorney general in order that he might have the proper legal status in the litigation.

From the foregoing uncontradicted facts it is clear Attorney General Parker did not give the facts nor the legal questions involved in the instant action his personal attention.

If prior to the filing of the instant action or during its pendency the attorney general entertained a personal opinion relative to the subject matter involved, it did not, under the facts presented, result from his active participation in either of the lawsuits mentioned. Manifestly any view he might have entertained as to the subject matter, which view was unrelated to his participation in the litigation, could not and did not disqualify him from serving as a justice of this court. (30 Am. Jur., Judges, ¶ 74, 76, 83; *Barber County Comm'rs v. Lake State Bank*, 123 Kan. 10, 13, 254 Pac. 401.) If the rule were otherwise, probably few lawyers, if any, could qualify to serve in that capacity.

At any rate, one thing is obvious. It is that prior to the filing of the instant action and at the time the previously mentioned state officials asked permission to file this action in order that they might enforce the statute, the constitutional validity of the statute had already been established with respect to a filled milk product assumed to be wholesome. (*Caroline Products Co. v. Mohler*, 152 Kan. 2, 102 P. 2d 1044.) Manifestly when the subject of the appropriate method or vehicle for the enforcement of the statute was being considered there was no need or occasion for the attorney general to form an independent and personal opinion relative to the constitutional validity of the statute. That issue, whether decided rightly or wrongly in the former case, had been settled. As attorney general he was bound by the decision. Thereafter the problem was one of enforcement. Quo warrantó was an appropriate method of enforcement. The statute having been upheld as a public health measure, its enforcement became a matter of public concern and duty. As attorney general Mr. Parker was willing and consented to have the name of the state used by state officials charged with the duty of enforcing the statute.

Under the existing circumstances was Mr. Justice Parker disqualified from participating in this decision?

[fol. 65] In 30 Am. Jur., Judges, §§ 74 and 76, we find the following:

"At common law, bias or prejudice on the part of a judge, not the result of interest or relationship, is not supposed to exist, and generally it does not incapacitate or disqualify a judge to try a case, unless the Constitution or statute so provides." (Sec. 74.)

"The words 'bias' and 'prejudice' as used in the law of the subject under consideration refer to the mental attitude or disposition of the judge toward a party to the litigation, and not to any views that he may entertain regarding the subject matter involved." (Sec. 76.)

A judge is not disqualified because he is interested in the question to be decided where he has no direct and immediate interest in the judgment to be pronounced. In 30 Am. Jur., Judges, section 57, the rule pertaining to interest is stated thus:

"To work a disqualification, the interest must be a direct, certain, and immediate interest, and not one which is indirect, contingent, incidental, or remote." (Sec. 57.) (See numerous decisions in footnotes.)

To the same effect are also *Evans v. Gore*, 233 U. S. 245, 64 L. Ed. 887; *Brinkley v. Hassias*, 83 F. 2d 351, 357. In the *Evans* case the question presented was the power of the federal government to tax the net income of a United States district judge, including his salary or compensation from the government. The federal constitution in effect provides the compensation of judges, both of the supreme and inferior courts, shall not be diminished during their continuance in office. It was the contention of plaintiff the taxing act was repugnant to the above constitutional limitation in that the tax by its necessary operation and effect diminished his compensation. The compensation of judges of the supreme court of the United States was, of course, indirectly affected by their decision. The court, however, held the question involved in the particular case was one which pertained to plaintiff's *own* compensation in which no other judge could have a *direct* personal interest and that there was no other appellate tribunal to which plaintiff under the law could go. While the members of that court, in view of their close relation to the question, ex-

pressed regret that the solution of the question should fall to them, it was determined the court could not decline or renounce jurisdiction of the case as plaintiff was entitled to invoke its jurisdiction on a question pertaining to *his own* compensation. The opinion in the Brinkley case, *supra*, which pertained to the revocation of Doctor Brinkley's license to practice medicine and surgery in this state, emphasizes the opinion in the Gore case. That opinion will receive our attention presently.

[fol. 66] This court on two previous occasions has considered the subject of disqualification of one of its justices who was a former attorney general. In each case, as in this one, the constitutional right to a decision of this court would have been denied if the challenged justice had been held disqualified. (*Barber County Comm'rs v. Lake State Bank*, *supra*; *Actua Ins. Co. v. Travis*, 124 Kan. 350, 259 Pac. 1068.) In the last cited case in which the attorney general, as in the instant case, had not actively participated in the case then before this court, it was *held*:

"A member of this court who was attorney general at the time an action was brought in the district court against the superintendent of insurance, which action was defended by assistants in the office of the attorney general, is not for that reason disqualified to sit on the hearing of the appeal of such case in this court." (Syl. ¶ 1.)

In the first cited case in which the justice, at attorney general, had taken no part in the preparation or trial of the case then before this court but had to some extent participated as attorney general in a former case, between some of the same parties, involving an issue germane to the case in which his qualifications were challenged it was *held*:

"An attorney general who is elected to the supreme court is not disqualified to sit in an action commenced after he was elected to the supreme court, but which involves a principle of law and an issue of fact which were embraced in an action in which he as attorney general took part and which was tried and determined before the second action was commenced." (Syl.)

In the course of the opinion in the Barber County Comm'rs case it was stated:

"The court takes judicial notice of the fact that the attorney general's office is a busy place and uses a number

of lawyers, all of whom are constantly at work on legal questions that arise on matters of public concern in the state. If an attorney general, afterward elected to the supreme court, is disqualified to sit in a case in which some legal question involved was passed on *by him or his office as attorney general*, there will not be many cases before the supreme court in which he can take part, because a large part of the entire field of law will have been under examination and discussion at some time during his two consecutive terms of office as attorney general." (Emphasis supplied.) (p. 13.)

The opinions in our former cases reviewed the common law ruling of disqualification of judges. The basis of disqualification under that rule was a pecuniary interest. The opinions noted the fact that our legislature had undertaken to legislate upon the subject of disqualification of judges and that in so doing it provided that district and probate [fol. 67] judges were disqualified by reason of having been of counsel for one of the parties previous to becoming a judge of such a court and that where such disqualification existed, provision was made, in district court cases, for calling in another judge, or selecting a judge pro tem, to try the case and that a similar provision was made as to probate judges. The opinion in the Aetna Ins. Co. case, *supra*, stated:

"No provision of our constitution, or of our statute, prescribes conditions under which a member of this court is disqualified from sitting. Neither is there any provision of our constitution or statute for calling another judge to sit in lieu of one who may be disqualified. The framers of our constitution evidently took the view that any person who had the standing and qualifications to become a member of this court would not be presumed to be biased or prejudiced by reason of the fact that some time prior to becoming a member of the court he had been an attorney for one of the parties in the action, and our legislature obviously has consistently entertained the same view. Hence there is no legal disqualification of a member of this court to sit in a cause, unless it can be said to be the common-law reason for disqualification of one who had a pecuniary interest in the result of a cause. We need not decide in this case whether that would be a disqualification, for it is not contended by plaintiffs that Justice Hopkins, or any other

member of this court, is disqualified for that reason." (p. 354.)

To the same effect is *Barber County Comm'rs v. Lake State Bank*, supra. There is no contention Mr. Justice Parker is disqualified under the common-law rule of pecuniary interest. He is not disqualified by our constitution or statutory provisions.

There are occasions when a justice, although not legally disqualified, may prefer not to participate in a decision in order to avoid any possibility of suspicion of bias or prejudice. That attitude is commendable and this court has recognized and applied it frequently so long as it did not result in denying to a litigant his constitutional right to have the presented question adjudicated. In other words, preferences frequently serve a good and useful purpose but when they come in conflict with official duty, the former must yield. In *Barber County Comm'rs v. Lake State Bank*, supra, where the members of this court were equally divided without the participation of Mr. Justice Hopkins, formerly attorney general, the court concluded:

"Justice Hopkins is not disqualified to act as a member of the court in this case. He might, with propriety, decline to sit, until it becomes necessary for him to act in order that the court may reach a conclusion. Under the circumstances that now exist, it is necessary for him to take his share of the burden that is on the court." (p. 15.)

[fol. 68] When the instant case came on for oral argument before this court all members thereof were present. No objection had been made to Mr. Justice Parker's participation in the case and he remained on the bench. When the case was reached for conference Mr. Justice Parker voluntarily expressed a preference not to participate in the conference or decision unless his official duties as a member of this court required him to do so. This request was freely granted. He remained in the conference but took no part therein until after it developed his vote was necessary for a decision. The court was of the opinion he was not disqualified to participate and that under the circumstances it was his duty to do so.

While our previous cases, as the instant one, pertain to participation of justices who were not legally disqualified, it is well established that actual disqualification of a mem-

ber of a court of last resort will not excuse such member from performing his official duty, if failure to do so would result in a denial of a litigant's constitutional right to have a question, properly presented to such court, adjudicated. (*Barber County Comm'rs v. Lake State Bank; Aetna Ins. Co. v. Travis; Brinkley v. Hassig; omnia supra.*)

The rule is based upon what judges and text writers frequently refer to as the Doctrine of Necessity. In the *Barber County Comm'rs* case we quoted the following statement from *Philadelphia v. Fox*, 64 Pa. St. 169, 185, with approval:

"The true rule unquestionably is that wherever it becomes necessary for a judge to sit, even where he has an interest—where no provision is made for calling another in, or where no one else can take his place—it is his duty to hear and decide, however disagreeable it may be."

See, also, other cases cited in our opinion.

In the *Aetna Ins. Co.* case we stated the principle thus:

"Since there is no method provided by our constitution or statute for having another person sit as judge of this court, if one or more members should be disqualified in a case, it necessarily follows that they must sit, when their views are necessary to a decision. There is no way in which questions may be decided in this court except by the decision of the members of the court. * * * This court is organized to decide cases. There is no substitute for it, or for any one of its members, in our scheme of government. Litigants are entitled to have the essential questions in their cases decided, and the members of this court cannot avoid the duty of deciding them (33 C. J. 989, and cases there cited), and certainly cannot do so for reasons that are legally insufficient." (p. 354.)

[Vol. 69] In the *Brinkley* case the rule was stated as follows:

"From the very necessity of the case has grown the rule that disqualification will not be permitted to destroy the only tribunal with power in the premises. If the law provides for a substitution of personnel on a board or court, or if another tribunal exists to which resort may be had, a disqualified member may not act. But where no such provision is made, the law cannot be nullified or the doors to

justice barred because of prejudice or disqualification of a member of a court or an administrative tribunal. In *Evans v. Gore*, 253 U. S. 245, 40 S. Ct. 550, 64 L. Ed. 887, 11 A. L. R. 519, a question arose in which the members of the court had a direct personal financial interest. Adverting to this regretful circumstance, the court declined to renounce jurisdiction which appellant was entitled to invoke since "there was no other appellate tribunal to which under the law he could go." Cases have arisen where all the members of state supreme courts have been jointly sued by disappointed litigants; confronted with the choice of denying the suitor his right of appeal or hearing it themselves, the courts have heard the appeal. An exhaustive note gathering and analyzing the cases from twelve states and from England and Canada may be found in 39 A. L. R. 1476. Other authorities may be found in 42 L. R. A., n. s., 788, L. R. A. 1915E, p. 858, and in 33 C. J. 989, and 15 R. C. L. 541." (*Brinkley v. Hassig*, 83 F 2d 351, 357.)

In 15 R. C. L., 541, it is said:

"It is well established that the rule of disqualification of judges must yield to the demands of necessity, as, for example, in cases where, if applied, it would destroy the only tribunal in which relief could be had. The true rule unquestionably is that wherever it becomes necessary for a judge to sit, even where he has an interest, if no provision is made for calling another in, or where no one else can take his place, it is his duty to hear and decide, however disagreeable it may be. The rights of the other party require it. The same rule obtains in the English courts." (Sec. 29.)

To the same effect are the numerous cases cited under the treatment of the same subject in 30 Am. Jur., Judges, § 55.

Defendants argue the relation of the attorney general in the two Kansas cases previously mentioned is not comparable to his relation to the instant case. They contend his alleged disqualification in those cases arose merely out of the position he had taken while performing his statutory duty of defending actions instituted against state officials. They call attention to the fact the attorney general is not only authorized on his own motion to institute actions in quo warranto to revoke articles of incorporation of domestic corporations when they have abused their corporate powers (G. S. 1935, 6041603) but that under the provisions

of G. S. 1941 Supp. 17-4003 it is made the duty of the attorney-general to institute such actions. They, therefore, contend it is within his discretion to determine whether such [fol. 70] an action shall be instituted and that he must necessarily give that matter his personal attention.

As an abstract proposition there is merit in some of these contentions. But let us examine them realistically with a view of determining the actual merit of the contention of disqualification as applied to the instant case.

We do not concur in the contention that there exists in principle a valid or substantial distinction between the previous assertion of a legal position in the defense of an action and the assertion of a previous legal position in the prosecution of an action insofar as the subject of disqualification is concerned.

We concur in the next contention that the attorney general is vested with discretion in determining whether he will institute or whether he will permit an action in quo warranto to be instituted for the purpose of determining whether the corporate powers, privileges or franchises of a domestic corporation have been abused. But realistically just what was the nature of the discretion which remained for the attorney general to exercise after our decision in *Caroline Products Co. v. Mohler*, supra, and how did the exercise of that discretion disqualify him to decide the controversy now before this court? As heretofore stated, after that decision the only subject upon which it was necessary for the attorney general to exercise discretion was the subject of the appropriate method of enforcing the statute and not whether the statute constituted a valid health measure which could be enforced. The controverted issue now before this court does not pertain at all to the subject on which the attorney general exercised his discretion, namely, whether quo warranto constituted an appropriate action for the enforcement of the statute. The controversy now is on the issue, or issues, which defendants have raised in that action and with respect to the determination of those issues, as previously indicated, Mr. Justice Parker was not disqualified.

Defendants argue if he is permitted to participate in this decision the plaintiff will be the judge of his own lawsuit. The contention is not sound. The sovereign power, the state, and not the attorney general, is the plaintiff. In quo warranto the state demands the writ from the court through

the medium of its chief law officer requiring the respondent to show why it should not be shorn of its powers. In the proceedings the attorney general has no personal interest, direct or otherwise. His personal interest is not affected [fol. 71] directly or remotely by the judgment or decree. In such a proceeding he is supposed to be impartial and to seek only the vindication of the rights of the state. (*State, ex rel., v. Village of Kent*, 96 Minn. 255, 104 N. W. 948, 1 L. R. A., n. s., 826, and case note in l. c.; *Commonwealth v. Walter*, 83 Pa. St. 105, 107; *State, ex rel., v. S. H. Kress & Co.*, 115 Fla. 189, 201-203, 155 So. 823.) He was not the plaintiff.

Defendants direct our attention to the case of *Tumey v. Ohio*, 273 U. S. 510, 71 L. Ed. 749. It is not in point. In that case the mayor of a village in the state of Ohio was declared disqualified to try a defendant for violation of the liquor laws. The first disqualification resulted from the receipt of substantial sums of money which he collected for himself as costs in case of conviction which gave him a direct pecuniary interest in the outcome of the trial. The second disqualification, resulted from his official motive to convict.

The final contention of defendants is that failure of states to provide a judicial system which eliminates all suspicion of partiality renders its decisions invalid under the due process clause of the federal constitution and in support thereof cite *Norris v. Alabama*, 294 U. S. 587, 79 L. Ed. 1074; *Smith v. Texas*, 311 U. S. 428, 85 L. Ed. 84; *Hill v. Texas*, 316 U. S. 400, 86 L. Ed. 1559.

Manifestly the statement is too broad and the decisions cited do not support it. It readily will be conceded generally by both lawyers and judges that next to the importance of a just decision is the fact that the decision should be reached in such a manner as to avoid reasonable suspicion as to the fairness and integrity of the court that renders it. (*Tootle v. Berkley*, 60 Kan. 446, 56 Pac. 755; *State v. Johnson*, 61 Kan. 803, 60 Pac. 1068.) Certainly legislatures and courts have no higher duty to perform than that of safeguarding these fundamental concepts. With these concepts in mind we have set forth the reasons which in our opinion require the instant decision as applied to the conceded facts. In view of those facts we have no hesitations in concluding Mr. Justice Parker was not disqualified,

but with propriety refrained from participating in the decision until his official duties required him to do so. Having concluded he was not disqualified, there is, of course, no need for resting the instant decision on the well-established doctrine of necessity as applied to disqualified judges.

Other contentions made in the motion for rehearing with respect to the merits of the decision have been examined and considered. As to these there is no change in the views [fol. 72] of the respective members of the court and the motion is therefore denied.

Mr. Justice Parker did not participate in that part of the motion for rehearing which pertains to the subject of his qualification.

[fol. 73]

CERTIFICATE

STATE OF KANSAS,
Supreme Court, ss.:

I, Walt Neibarger, Clerk of the Supreme Court of the State of Kansas, do hereby certify that the foregoing pages, numbered 1 to 834 inclusive, constitute a true, full and complete transcript of the record and proceedings had in the case of State of Kansas ex rel., A. B. Mitchell (substituted), as Attorney General, Plaintiff v. The Sage Stores Company, a Corporation, and Carolene Products Company, a Corporation, Defendants, and also of the opinion of the court rendered therein, as the same now appear on file in my office.

In testimony whereof, I have hereunto set my hand and affixed the seal of said court at my office in Topeka, Kansas, this 15th day of February, 1944.

Walt Neibarger, Clerk, Supreme Court of Kansas
(Seal.)

[fol. 74] IN THE SUPREME COURT OF THE STATE OF KANSAS

Filed Feb. 15, 1944, Walt Neibarger, Clerk Supreme Court.

No. 35,143.

THE STATE OF KANSAS, ex rel. A. B. MITCHELL (substituted),
as Attorney General, plaintiff,

vs.

THE SAGE STORES COMPANY, a corporation, and CAROLENE
PRODUCTS COMPANY, a corporation, Defendants.

STIPULATION

The defendants herein desiring to file in the Supreme Court of the United States a petition for a writ of certiorari to the Supreme Court of the State of Kansas for a review of the judgment rendered in favor of the plaintiff and against the defendants in this cause, it is hereby stipulated and agreed by and between the plaintiff and the defendants in the above entitled case that

1. The transcript certified by the Clerk of the Supreme Court of the State of Kansas to the Clerk of the Supreme Court of the United States consisting of following portions of the record in this cause

- (a) Abstract of defendants;
- (b) Counter-abstract of the plaintiff;
- (c) Majority opinion and dissenting opinion of the court filed October 2, 1943;
- [fol. 75] (d) Judgment entered pursuant to majority opinion;
- (e) Defendants' motion for rehearing;
- (f) Supplement to defendants' motion for rehearing;
- (g) Objections of plaintiff to defendants' motion for rehearing;
- (h) Opinion of the court denying defendants' motion for rehearing;
- (i) Judgment entered denying motion for rehearing.

shall constitute the record upon which the petition for writ of certiorari is to be considered.

2. In the event the petition for certiorari is granted, the portions of the record in this court included in the transcript as above specified shall constitute the record to be printed for consideration of the case in the Supreme Court of the United States.

Dated at Topeka, Kansas, February 15, 1944.

Tom Lillard, Topeka, Kans., Tinkham Veale, Topeka, Kans., Attorneys for Defendants; A. B. Mitchell, Attorney General of the State of Kansas; C. Glenn Morris, Warden; L. Noe, Special Assistant Attorneys General of the State of Kansas.

[fol. 837] SUPREME COURT OF THE UNITED STATES

ORDER ALLOWING CERTIORARI—Filed April 10, 1944

The petition herein for a writ of certiorari to the Supreme Court of the State of Kansas is granted, limited to the first question presented by the petition and the case is assigned for argument immediately following No. 674.

And it is further ordered that the duly certified copy of the transcript of the proceedings below which accompanied the petition shall be treated as though filed in response to such writ.

Endorsement on Cover: File No. 48,238 Kansas, Supreme Court, Term No. 34. The Sage Stores Company and Caroleene Products Company, Petitioners, vs. The State of Kansas, ex rel. A. B. Mitchell (substituted as Attorney General). Petition for a writ of certiorari and exhibit thereto. Filed March 1, 1944. Term No. 34 O. T. 1944.

(2486)